Landscape Character & Capacity Assessment of Doncaster Borough

March 2007

Final Report
Revision A
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Part 1:
Introduction
THE VISION FOR SOUTH YORKSHIRE 2021

The Spatial Vision - Where South Yorkshire is going

“South Yorkshire is where England’s North Country begins. We are committed to making it an unforgettable landmark - a place where people have no doubt that they have arrived in a distinctive and successful area of Britain renowned for its outstanding economic opportunities and quality of life.”

“The vision is that by 2021 South Yorkshire will be a thriving sub-region. Currently the sub-regional economy is in the midst of revival, but this spatial vision is about much more than revival. The South Yorkshire Partnership seeks to drive forward the transformation of South Yorkshire into a place that is a national economic motor combining exceptional quality of life with economic opportunities for all.”

(Extracted from the Sub-Regional Spatial Strategy Vision for South Yorkshire Nov. 2004)

THE VISION FOR DONCASTER 2021

By 2021:

“All (Doncaster’s) major development will have been distributed in accordance with a settlement hierarchy which supports the sustainability of existing communities and the renaissance of urban areas; development will have embodied the best principles of sustainability and high quality design providing new buildings and spaces that contribute to a sense of place; the Borough’s built and natural heritage will have been preserved and enhanced.”

“The countryside across the Borough will be more attractive, accessible and vibrant with new woodlands, farm based rural diversification projects, and the sensitive development of recreation facilities and tourist accommodation; new development will have reinforced the local distinctiveness of the different landscape character areas.”

“Realising the Borough Strategy vision would make the period up to 2021, the life span of this plan, one of the most exciting periods of development in the Borough’s history. The Core Strategy provides the strategic level policies and proposals for this sustainable growth and renaissance; it is based on the following spatial vision for Doncaster in 2021.”

(Extracted from the Core Strategy Preferred Options for Doncaster 2005)

1.0 Introduction

The Doncaster Local Development Framework

As part of the new planning system in England, local authorities have to prepare a ‘Local Development Framework’ (LDF). The LDF will replace the existing development plan for the Borough, the Doncaster Unitary Development Plan. The Doncaster LDF will include policies and proposals relating to use of land, therefore providing the basis for determining planning applications and future development in the Borough. Unlike the Unitary Development Plan (UDP) published in 1998, the LDF will not be a single document but will consist of several smaller documents, which will allow quicker revision and alterations.

The Local Development Framework (LDF) will provide the structure for realising the Borough’s Vision over the Development Plan period by 2021. Over coming months a number of individual development plans are being developed by the Environmental Planning section of Doncaster’s LDF Team. These plans aim to be realistic and achievable in order to enable the realisation of the Borough’s Core Strategies by 2021. These development plans will be based on robust research and evidence that will ensure their suitability for purpose and that the plans will be sustainable in the long term. This Landscape Character and Capacity Study (The Study) of the Borough is one of a number of studies currently being undertaken that will contribute to the Local Development Framework for Doncaster.

It is envisaged that this Landscape Character and Capacity Study will contribute to the development of the LDF by:

- Informing the Minerals and Waste Disposal Plans
- Informing other types of Development Plan
- Assisting in the determination of current and future planning applications in line with PPS1 (Delivering Sustainable Development) and PPS7 (Sustainable Development in Rural Areas)
- Assisting in the review of existing local landscape designations (in line with PPS7)
- Contributing to the sustainability, design and community aspects of the new planning system (as set out on PPS1 and PPS7)
- Providing a creative resource for achieving appropriate development for the local area
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This document has been developed to provide a robust evidence base and is structured in such a way that it can be used as a practical reference document for planners and developers. It includes landscape character descriptions, detailed landscape capacity and outline design guidance for each landscape character area. The document also provides a broad policy context and guidance for incorporating development into the landscape which should be read in conjunction with the more detailed advice for landscape character areas to ensure all developments retain and enhance the unique landscape character of the Borough.

The Study provides the following a series of key outcomes that will form robust evidence to be used in the planning process for the Borough. Key outcomes include:

- Identification of key characteristics of Doncaster's landscape
- Identification of significant changes in the landscape that have taken place since 1994
- A Borough-wide survey of the landscape character areas
- An assessment of the landscape's capacity for future development
- Recommendations for the development of area specific landscape strategies
- Recommendations for potential LDF policies and/or Supplementary Planning Guidance, with reasoned justifications for key Borough-specific development issues

2.0 The Study

2.1 Research Methodology Development and Implementation

ECUS was appointed by Doncaster Metropolitan Borough Council (DMBC) in February 2006 to undertake a Study to further assess the Borough's landscape and the capacity for new development ultimately to provide a robust evidence base for the emerging LDF. The study includes a review and update of the existing Landscape Assessment of the Borough (1994) in line with current best practice; an assessment of the landscape capacity of the Borough to accommodate various types of development and a series of recommendations and suggestions for future landscape strategy and policy.

Throughout the development of this Study, ECUS has been guided by the Terms of Reference contained in the Invitation to Tender dated the 17th January 2006 and the further guidance notes issued by DMBC following the pre-contract meeting held on the 8th February 2006 and later Steering Group and Stake holder meetings throughout the course of the Study.

The methodology for the landscape character review and capacity assessment was developed in line with best practice guidance including that published by the Countryside Agency Landscape Character Assessment Guidance for England and Scotland 2002 and Topic Paper 6 – Techniques and Criteria for Judging Capacity and Sensitivity to meet the requirements of the brief for this project.

The Study involved a number of stages each requiring detailed development of a methodology. The methods were developed in parallel to ensure an integrated approach to the implementation of each stage. These stages are outlined below and the methodologies are described in detail in the following section.

Study Stages:

- Development of our approach to the Study as a whole
- Desk study including review of the 1994 landscape assessment and gathering base line data
- Development of our approach to the assessment of landscape capacity for development type
- Stake holder and Steering Group engagement in the Study process and consultation at various stages
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- Field work including landscape character review, broad assessment for capacity of landscape types and detailed capacity assessment for development types at specific locations
- Assimilation of findings into an updated LCA report to form an accurate, practical document
- Production of landscape capacity statements combined with suggested mitigation measures
- Production of a series of Landscape Policy recommendations and design guidance recommendations

### 2.2 Developing our Approach to Landscape Character Review and Capacity Assessment

In 1994, a landscape assessment for the Borough was carried out with the main objectives being to classify the Borough into areas of similar character and to use this as a basis for evaluating the designation of Areas of Special Landscape Value (ASLV) to help control development and preserve the most highly valued landscapes of the Borough. The landscape was divided into 7 Landscape Character Types (LCTs) with accompanying descriptions of the characteristic qualities of each and 7 ASLVs were recommended.

The Landscape Character Types defined in the 1994 Landscape Assessment were used as a starting point for the review of landscape character within the Borough. However, it was recognised that the application of the 2006 assessment to a different end use, that is to inform the capacity of the landscape to accommodate different types of development, would require a different approach.

To this end it was decided that the LCTs should be subdivided into LCAs to give a greater level of detail to inform the capacity assessment. Also it was clear that additional LCTs may be required to highlight the character of the river valleys more prominently.

Further desk study and fieldwork were planned to update the character descriptions to reflect changes over the last 12 years; to recognise the differences between LCAs within each LCT; to record pressures for change in the landscape as a lead in to the capacity assessments; and new descriptions for additional LCTs.

Desk study and field work were also required to carry out capacity assessments for up to eight different development types within the context of each LCA. Professional judgement was to be applied to combine the various factors influencing capacity. To ensure that the capacity assessment was tailored to the unique characteristics of each LCA, this was to follow on immediately from the landscape character review for each LCA. A consistent approach to visualising the development type in the landscape was to be met by including a typical description for each development type.

To ensure that the methods used were robust and in line with current best practice, advice and feedback was sought from nationally recognised experts in the fields of Landscape Character and Capacity Assessment at key stages throughout the assessment and including a review of the final draft of the report.

### 2.3 Desk Study

The following background information on the landscape of Doncaster Borough was provided by Doncaster MBC:

- Urban Characterisation Study 2006 (draft)
- Biodiversity Action Plan 2006 (draft)
- GIS data from the current Unitary Development Plan
- Landscape Assessment of Doncaster Borough 1994

This information was brought together alongside Ordnance Survey map data in order to draft revised subdivisions of the previously identified Landscape Character Types (LCT) into Landscape Character Areas (LCA) of common character to be validated in the field.

Landscape Character Areas were assigned where LCTs are already physically subdivided by another LCT such as a river valley. Also where there is a change in landscape characteristics such as topography or the overall pattern and scale of land use.

Areas of Special Landscape Value (ASLVs) are indicators of landscape value not landscape character and so they were not used to define LCAs, unless their boundaries also correspond to a distinct change in overall landscape characteristics. The LCAs were named according to the main settlements located at opposite ends of each area. These were further modified in consultation with the stakeholder group.
The review of background information including descriptions of typical development types helped to determine factors to be taken into account during the landscape capacity assessment.

Field survey forms were developed to record data for each LCA and development type in a consistent manner. A brief summary of the key characteristics of each LCT was extracted from the 1994 Landscape Assessment and included within the survey forms as a prompt for assessing how characteristics within the LCA differ. Factors influencing landscape capacity were included on the survey forms including landscape value; landscape quality; likely impacts on landscape character; likely impacts on sensitive viewers; and the potential for mitigating these impacts. Each of the factors affecting capacity for each development type were rated as high, medium or low with descriptive prompts included to ensure efficient use of time and a consistent approach.

Prior to commencing the field work, a pilot study of the survey forms was carried out and discussed with the steering group and their content fine tuned where necessary.

2.3 Steering Group and Stakeholder Consultation

The Steering group consisting of key Doncaster MBC representatives were closely involved with the project throughout the process from development of the Brief, management of the tender process and as part of the Stakeholder consultation and final report approval process. The Group were key in providing local knowledge of the study area and guidance on the focus of the study. In addition to the Steering Group, a wider Stakeholder Group was established and a formal consultation process implemented including the following stages;

a) Questionnaires outlining the Study purpose, process and inviting Stakeholders to comment and contribute were developed and sent to Stakeholders. These included DMBC Team representatives, DMBC Elected Members, Neighbouring Local Authority LDF/Planning Teams and a wide range of further ‘external’ Stakeholders including Statutory Bodies. Refer to Appendix for details.

b) Further Stakeholder meetings were held where Study findings to date were presented and specific queries form different parties discussed and ways forward agreed. Detailed records of each meeting were kept and are available on requested from DMBC.

c) Regular Steering Group meetings and updates were held where current queries and issues were discussed along with Study findings to date.

d) A draft report was provided to the Steering Group prior to the finalisation of the Study. Subsequent queries and comments were clarified and sections amended accordingly where appropriate.

2.4 Field Work

The field work was carried out by a team of Landscape Architects trained in the field of LCA over a period of 8 weeks in May/June 2006. Data was recorded systematically on the survey forms along with a clear photographic record. The survey was carried out at broad and detailed levels in accordance with the Brief.

A broad survey assessed the overall character and capacity for each development type within each Landscape Character Area. This was assessed from selected viewpoints with supplementary information being added from the other parts of the LCA. Viewpoints were selected that were publicly accessible and representative of the overall character of the area.

Detailed surveys for housing, strategic employment sites and minerals sites were carried out at various locations in line with the brief prepared by DMBC. The survey assessed the edge or area from a suitable viewpoint. Settlement edges were subdivided into areas of similar character which could be viewed from one point. The survey recorded similar information as the broad survey in greater detail, but is not a substitute for a full Landscape and Visual Impact Assessment should this be required as part of the planning application process. It should be noted that each assessment was completed to cover an area or settlement edge as a whole but was not intended to be site specific.

In assessing capacity of the landscape for each development type, in line with good practice guidance, the landscape character was considered in isolation without reference to other factors such as transport, noise and detailed ecological impact studies/data. It is intended that this report will be used in conjunction with studies of such other factors to guide appropriate location of development.
2.5 Assimilation of Findings and Policy Development Recommendations

The findings of the desk and field study were collated and used to provide a basis for informing outline landscape policy recommendations. The scope of policy development and coverage arising from this study was set out in a discussion note dated 2nd March 2006, and provides the basis for the recommendations on the landscape planning strategies and policies contained in this report.

The scope of policy development taken from the Terms of Reference for the Study is:-

- To inform the Minerals and Waste Disposal Plan
- To inform other types of Development Plan
- To assist in the determination of current and future planning applications in line with PPS1 (Delivering Sustainable Development) and PPS7 (Sustainable Development in Rural Areas)
- To assist in the review of existing local landscape designations (in line with PPS7)
- To contribute to the sustainability, design and community aspects of the new planning system (as set out on PPS1 and PPS7)
- To be a creative resource for achieving appropriate development for the local area
- To provide a basis for the development of future landscape planning policies
- To assist with preparing local planning policies and assessing planning applications in the light of the Regional Spatial Strategy

Whilst the resultant policy output recommendations from this Study will emphasise the significance of the landscape character of the District and its capacity to accommodate different development types, the finally determined policies are likely to reflect other development considerations inherent within the current planning system, and will be influenced by considerations other than landscape character and capacity.

3.0 Doncaster Borough - The National and Local Landscape Context

3.1 Landscape Character Assessment – The National Context

The Countryside Agency has mapped the whole of the United Kingdom into 159 distinct Countryside Character Areas to provide a consistent national framework for more detailed local landscape assessments. Doncaster Borough is covered by three of these Countryside Character Areas that are: South Yorkshire, Derbyshire and Nottinghamshire Coalfields; Southern Magnesian Limestone; and Humberhead Levels. These areas within the Borough relate closely to the topography and geology of the landscape and provide a context for the more detailed landscape assessment. They can be described as follows:

**South Yorkshire, Derbyshire and Nottinghamshire Coalfields**

A heavily populated semi-rural region characterised by mixed farming and enlarged mining towns associated with the coal measures along the eastern edge of the Pennines. The character of this area is of mining settlements recently superimposed on an established agricultural pattern. Larger towns outside the Borough, including Rotherham, Barnsley and Wakefield, are part of the extensive Yorkshire coalfield.

**Southern Magnesian Limestone**

Also a semi-rural region characterised by arable farming on an elevated ridge. This forms part of the highest ground in the Borough, in the south west rises to about 140 metres (AOD) near Micklebring. The geology comprises predominantly Magnesian limestone with quarrying as a traditional activity. More recently these quarries have increased in size and the influence of the coalfield including the mining settlements has extended from the west onto the Magnesian limestone, as deep mines have exploited the concealed coalfield.

**Humberhead Levels**

The underlying geology of this character area within the Borough is of Triassic strata, which overlay the older Permian rocks of the west. The Sherwood sandstone outcrop forms relatively high ground around Bawtry Forest. The ridge descends from this point northwards where the topography is typically below 10 metres AOD. This low lying farmed belt is part of the Humberhead levels, a region dominated by rivers, which drain around one fifth of the land mass of England.
The Don, Went, Torne and Idle are the main rivers, and drainage improvements date from Anglo Danish or even Roman times; the works of Vermuyden in the 17th century produced the most marked changes in the landscape. The extensive land drainage, together with large scale warping (depositing alluvium on the soils) has produced some of the best arable land in Britain. Canals, railways and modern motorways cross the region, and are a feature of the landscape. Historic market towns, some of which once served as thriving ports, are also characteristic and include Bawtry, Thorne, Hatfield and Tickhill.

3.2 Doncaster’s Landscape – Formative Influences
Refer to Following Figures in Appendix

- Figure 1: Simplified Surface Geology of Doncaster
- Figure 2: Topography of Doncaster
- Figure 3: Landscape Designations of Doncaster
- Figure 4: Floodplain Locations for Doncaster

Landscape and Geology

The close relationship between landscape and geology in Doncaster is best described by the pattern of exploitation of natural resources by man over time. Three major geological formations run from north to south; the coal measures in the west, the Magnesian limestone; and the Permo Triassic Sherwood sandstones and Mercia mudstones in the east. The great diversity of scenery which is a result of the geology also results in a diversity of ecological habitats which are of high value to wildlife. In some cases, the effects of man have reduced the diversity by disturbance and exploitation of habitat; in other cases, the direct result of man’s activities has given new opportunities for wildlife. Industrial development and urban sprawl have resulted in a loss of countryside throughout the Borough; conversely the reclamation and drainage of the ‘wastes’ has meant that other land has been brought into productive agricultural use.

Coal

The coal measures occur in the extreme west of the Borough, and form an undulating landscape, dissected by the rivers Don and Dearne. The region is densely populated, as the former rural settlements have been transformed into colliery villages, characterised by mainly disused collieries and spoil tips. The coal outcrops west of the Borough, and dips below the limestone to a depth of around 700 metres. The Barnsley coal seam accounts for the bulk of coal production in the area. Coal mining began in the easily accessible seams, and it only became practical to exploit the deep coal in recent times. The notable deep mines came into production as follows: Brodsworth (1907), Bentley (1908), Maltby (1911), Askern (1913), Rossington (1915), Hatfield Main (1917), Markham Main (1926) and Thorne (1926). Recent closures have left only three active collieries in the Borough, with serious economic effects on the communities faced with few alternative sources of employment.

Limestone

Limestone quarrying has taken place along the central Magnesian limestone belt since the middle ages. Good building stone was obtained at Marr, Brodsworth, Hickleton and Hampole. Poorer quality stone was extracted and burnt for lime, and used in agriculture and building. Lime kilns were sited at Warmsworth, and the largest such works were at Levitt Haggs on the south bank of the river Don. Lime production peaked in the mid 19th century. Limestone quarries are now worked on a much larger scale, and current workings are found at Cadeby and Stainton near Maltby. The Dolomitic aggregates are suitable for use in concrete, and for coated roadstone.

Sand and Gravel

In the Doncaster area, the main resource of sand and gravel for use in the construction industry is the older river gravel. This extends from Austerfield in the south to Stainforth in the north, on the west side of the old course of the river Idle. Fluvio-glacial sand has been extracted near Rossington. Sherwood sandstone underlies the various sands and gravels, and is worked for building sand. The pattern of gravel pits in the landscape is typically small to medium scale, and restoration following the workings is a mixture of poor agricultural land and flooded pits which have a beneficial use as a wildlife habitat. Wet pits occur at Tudworth, Tyrham Hall, Holme Wood and Misson, and they support a variety of passage, wintering and breeding birds.
Woodlands

Coniferous woodlands have been planted on the Sherwood sandstone’s during the present century by the Forestry Commission. The largest of these is Bawtry Forest, which covers 250 ha., including White Mires Wood, Martin Beck and Martin Common Farm. The plantations were established between 1929 and 1966, and Corsican pine is the dominant species.

Peat

The peat deposits on Hatfield Moors and Thorne Moors have been exploited for many years, and these reserves represent the largest in Britain. Production of peat has been subject to a recent agreement between the major producers and Natural England, formally English Nature, who aim to manage the remaining reserves in order to conserve the valuable habitat which has developed on the peat. The landscape of the peat moors is relatively inaccessible and remote; the vast empty spaces of dark brown peat, are waterlogged and often featureless. This is a stark contrast with the surrounding diversity of habitats.

The Shaping of the Landscape

The earliest evidence of man in the Doncaster area is in the form of a Stone Age “Rossington Hand Axe”. Artefacts from the Bronze Age and Iron Age have also been found. During the Roman Occupation, Danum (Doncaster) became the most important of several Roman sites, situated on the major route of Watling Street from London to the North.

The early settled history of the Doncaster area suggests that historically it has been an important border area. Two tribal influences met on or around the Don; the Corieltouvi to the south, concentrated in Lincolnshire, Leicestershire and Sleaford; and the Brigantes to the north. The Corieltouvi were quite advanced, using pottery and coins, whilst the Brigantes were made up of much smaller, more nomadic clans. The border position of Doncaster was overlain with similar ‘kingdoms’ in Anglo Saxon times; the kingdom of Mercia extended southwards from the Don, whilst the kingdom of Northumbria reached its southern limit in this area.

The Anglian and Danish invaders used the Humber estuary and navigable rivers to penetrate deep into the countryside around Doncaster. Most of the small towns and settlements owe their origins to these settlers.

Place name endings which are identified with the Danish include by and thorpe. Examples are Barnby Dun, Cadeby, Edenthorpe and Armthorpe. Doncaster itself is an indication of Norse influence; Saxons and Normans used the softer chester endings in similar adaptations of Roman fortified town names.

Early attempts at land drainage may date from Anglo Danish or Roman times. However, the most important of the major drainage operations were the river diversions carried out in the 1620’s by Cornelius Vermuyden and others. In total around 15,000 hectares were drained. Flooding of the whole of the eastern part of Doncaster was common, as the Don, Torne, Idle, Went and Aire made their way towards the Humber. Vermuyden diverted the Don northwards and the Torne and Idle eastwards, and dug a network of smaller drains on land between the rivers. Large scale ‘warping,’ or deliberate inundation of farmland with alluvial laden waters, built up the soil layers and transformed land into productive farmland. The drainage efforts continued into the 19th century, when steam engines were used to pump the water away. The area was progressively converted to agricultural use, and a series of private and Parliamentary enclosures were made between 1760 and 1820.

The wetland ‘Carr’ areas had beneficial uses as the population of wildfowl was very high in the medieval times. In 1657, a duck decoy was constructed in Potteric Carr, and was operated regularly until at least 1772, when the Carr was drained and enclosed. Drainage schemes have continued until the present day, and the Went and Idle valleys remained subject to frequent flooding until the drainage scheme of 1980.

The washlands are not the only area to have been significantly modified by man in the name of agricultural improvements. Between Thorne and the river Idle, and from Rossington to Wroot, areas of heathland were extensive on the sands and gravels overlaying the Sherwood sandstones. Since 1940 afforestation, intensification of farming, industrial and urban development has destroyed all but a few isolated pockets of heathland.

Elsewhere in the Borough, the intensification of farming has blurred the traditional concentration of cereals on the limestone and pasture on the coal measures. Technical advances, agricultural subsidies and policies have tended to favour a cereals monoculture over the whole Borough. Hedgerows, lines of trees and other landscape elements have been extensively eliminated, and the area of permanent pasture has declined dramatically. Very few traditional hay meadows survive - these are mainly in the Owston, Thorpe Marsh and Sykehouse areas.
The other, more obvious influences on the landscape of Doncaster since medieval times have been the development of industry and transport, along with a rapidly growing population. Doncaster town has a long history, dating from before Roman times. However, even by the 19th century, the pattern of settlement over the District was scattered in rural settlements, isolated farmsteads and small market towns. Doncaster’s population was around 2,250 in 1743, and just over 6,000 at the time of the first census in 1801. By 1851, this had doubled. The locational factors of the river Don, and the Great North Road stimulated the expansion with the growth in coaching services and ancillary trades.

Before the railways, trade and communication depended on tracks, poor roads and navigable rivers. Doncaster itself was a port until the early 19th century. Canal improvements linked the steel town of Sheffield with the river Ouse via Doncaster. The Chesterfield and West Stockwith Canal, opened in 1777, reduced the earlier importance of Bawtry as a port. The New Junction Canal was dug between 1896 and 1904, and linked the Don to the Aire and Calder navigation. Canals proved to have most benefit for the coal mining and metallurgical industries, and had only a marginal effect on the eastern agricultural hinterland of the Borough.

The railways had a more far reaching effect on the development of Doncaster than the canals, and Doncaster’s strategic and axial location once again came to the fore. The Great Northern Railway Company’s main line linking London and York, reached Doncaster in 1848. By 1853, locomotive and carriage repair shops had opened, and by 1880 the town was an important railway centre. It is possible to speculate that the skills built up in the labour force during the stage coaching days served the town well, and the location of the carriage repair works was arguably a result of Watling Street passing through Doncaster.

The coal mining industry quickly developed, and was served by the railway network. A marshalling yard and sidings at Potteric Carr finally destroyed the old duck decoy in 1866. The railway boom was relatively short lived, and although new lines were built up to 1916, most were of only local significance. The railways destroyed the mining industry’s dependence on road and canal transport, and introduced many new and lasting landscape features such as sidings, cuttings, embankments, viaducts, stations and other buildings. Building materials, such as bricks, slate and granite were able to be used far from their origin of manufacture, and the classic red brick, slate roofed colliery towns were built throughout Doncaster at this time.

The early planning of settlement during the mid 19th century was based on high density workers cottages, however in the early years of the 20th century, enlightened ideas were introduced, and a model village at Brodsworth was laid out with spacious and extensive grassed areas, tree lined avenues and front gardens.

The railway era began to decline seriously after the Second World War, as motor transport expanded for both passenger and goods traffic. Small stations were closed, and track embankments were colonised by scrub woodland, often still in evidence today. Some disused railways have become attractive rural footpaths, such as from Denaby to Harlington, and Scawthorpe to Warmsworth. The growth and dominance of roads over railways has continued up to the present day, and three new motorway routes cross the Borough the M18, AIM and M180. The junction of the M18 and AIM reflects the axial position which Doncaster has traditionally enjoyed, between the south east and north east and the Midlands to east coast routes. The new motorways cut across the ‘natural’ valley transport corridors of Doncaster. Extensive rock cuttings near Edlington, and artificial embankments as at Hatfield illustrate this superimposed pattern of roads on the landscape.

Doncaster has continued to grow throughout this century, following the boom years of the 19th century, and continued exploitation of the concealed coalfield has lead to the population increase to 289,000 in 1981. Suburban expansion along the Don Valley, and on major radiating roads from Doncaster, has resulted in a much enlarged built up area, from Conisborough to Bamby Dun and from Adwick to Bessacarr. The industrial base of the town has spread from its reliance on railways and coal, and there are a variety of manufacturing industries found locally.

More recent cultural influences around Doncaster were related to the rapid spread of coal mining over a traditionally agricultural hinterland. The mining communities have superimposed a culture from beyond the nearby South Yorkshire coalfield, often with a Geordie or Scottish influence. This has shown itself by the sharp boundaries between town and country, and the rather self contained mining settlements surrounded by a contrasting agricultural community. The flat, low lying landscape to the north and east has many references to its continental neighbours of the Netherlands, and the influence of the land drainage engineers has left a distinctive imprint on the landscape.
The Magnesian limestone belt still represents a physical, and to some degree a cultural watershed. To the west of the limestone the traditional character of the coalfield communities is dominant, whilst to the east and including Doncaster, a more cosmopolitan, historic and diverse range of communities exists.

Doncaster has long been a ‘melting pot’ of cultures, from the time of the ancient tribal borders around the Don Valley, followed by the settlers from Rome and Scandinavia. More recently, the railway transport era, and the position on the improved motorway network and the creation of Robin Hood International Airport has continued to attract a diverse and mobile population. It has also created employment opportunities which are in turn placing greater pressures on the landscape for development.

The historical development and shaping of the Doncaster landscape has left clear and distinctive patterns which are described in more detail in Chapter 4.

3.3 Sources of Information

The following documents provide further sources of information on the Borough’s landscape. These provide useful background information alongside the information contained within this report to assist in achieving a best fit of development in the landscape.

**Landscape Assessment of Doncaster Borough** (published by Doncaster MBC, 1994)

This study reviewed the designation of the Areas of Special Landscape Value (ASLV). To assist in achieving this, an assessment of landscape character and landscape value for the whole of the Borough was carried out. This included sub-dividing the landscape into seven areas of broadly similar character and describing the key make up of each one. The report details the factors for ASLV selection, evaluation of each area of landscape against these criteria and describes the areas selected as ASLVs. The Doncaster Landscape Capacity Study has updated the landscape character assessment, but this document provides a useful reference to inform further work on Areas of Special Landscape Value.

**Doncaster Biodiversity Action Plan** (draft published by Doncaster MBC, June 2006)

The overall objective of the plan is to preserve existing habitats, recreate lost habitats and increase the populations of locally significant and vulnerable species. The action plan contains eighteen draft habitat action plans which represent the current habitat conservation priorities for Doncaster. There is also a draft summary introduction, umbrella targets and a list of relevant policies and legislation. The Species Action Plans are under development with an audit of rare or threatened species in the Borough currently being carried out.

The draft document is available to download on the Doncaster MBC website:


**Doncaster Urban Characterisation Study**

This document (draft currently under preparation) provides a summary of the key components of each of the main settlements within Doncaster Borough including information on the settlement context, landscape setting, materials and building types.

**Doncaster Historic Environment Characterisation Project**

The project (currently being undertaken by South Yorkshire Archaeological Service for funded by English Heritage) is part of a wider historic environment characterisation being undertaken for each local authority area within South Yorkshire. It includes data collection of historic and land use data review the information gathered to produce a report on the historic character of the Borough. Colour coded maps will illustrate how the land use of each area developed over time.

**Thorne and Hatfield Access Audit**

This study (produced by ECUS for English Nature, November 2003) details the extent of existing physical access and transport links within and around Thorne and Hatfield Moors.

**The Green Corridor Strategic Framework and Spatial Plan**

(Produced by the Green Corridor Partnership and GVA Grimley, November 2005)

The framework was set out to address the issues of low housing demand and market vulnerability area across parts of Barnsley, Wakefield and Doncaster (Woodlands, Adwick-le Street, Askern, Carcroft, Skellow and the countryside to the west). The area has a legacy of coal mining as well as a green and rural setting. Strand 6 of the strategy, entitled “Landscape and Green Network” aims to implement a landscape strategy which makes the most of the countryside which is “on the doorstep” of the towns and villages within the
Green Corridor. Adwick le Street/ Woodlands within Doncaster Borough is one of the towns in the central spine to be used for greenspace strategy.

**Humberhead Peatlands NNR Management Plan**

The Humberhead Peatlands NNR Management Plan (draft report prepared by ECUS for English Nature, June 2006) covers the areas of Thorne and Hatfield Moors and includes a review of existing plans and available data, with non technical summaries for public consultation. Recommendations are included for management options based on current site status and management progress.

**Creswell Crags Limestone Heritage Area Management Action Plan**

A management action plan (published December 2003) was produced for the main limestone vales and gorges within the Creswell Crags Limestone Heritage Area which includes part of the limestone plateau within Doncaster Borough. The five key elements of the study include one to identify and assess opportunities for improving intellectual, physical and visual access for local people and for visitors, including the potential for involving local people in management and interpretation. It is noted that strategic planning is made difficult by the fact the Heritage Area is on the boundaries of three different local authorities. The document is available to download on the English Heritage website:

http://www.english-heritage.org.uk/server/show/conWebDoc.4112


This is one of a series of eight regional volumes that describe the countryside character and landscape of England, including the natural and man-made forces that created it. It gives descriptions of the distinct areas that make up ‘the Character map of England’. There are 3 national Countryside Character Areas covering Doncaster Borough which are Southern Magnesium Limestone, Humberhead Levels and South Yorkshire, Derbyshire and Nottinghamshire Coalfields. The document is available to download from the Countryside Agency’s website:

http://www.countryside.gov.uk/LAR/Landscape/CC/yorkshire_and_the_humber/index.asp

4.0 Landscape Character and Capacity Study (Refer to Study: Part 4)

Refer to Following Figures:

- Figure 6: Landscape Capacity for Housing
- Figure 7: Landscape Capacity for Strategic Employment
- Figure 8: Landscape Capacity for Mineral Workings
- Figure 9: Landscape Capacity for Landraising
- Figure 10: Landscape Capacity for Windpower
- Figure 11: Landscape Capacity for Willow Biomass
- Figure 12: Landscape Capacity for Large Scale Forestry
- Figure 13: Potential additional ASLV designations

5.0 Summary of Development Capacity Findings

For Baseline Development Descriptions and Summary of Development Capacity Findings please refer to Study Part 4.

Refer to Study Part 4 for Detailed Landscape Character and Capacity Assessments
Part 2: Planning Policy Context and Recommendations
Part 2: Planning Policy Context and Recommendations

1.0 Doncaster’s Planning Policy Framework and Context

The planning context for landscape strategies and policy is briefly outlined below, followed by a series of statements for vision of the landscape, objectives, and proposed strategies and policies, guidance for development types and other potential policy delivery mechanisms.

1.1 Current Planning Policy Guidance and Statements

Planning Policy Statements (PPS) set out the Government’s national policies on different aspects of land use planning in England, and are replacing Planning Policy Guidance (PPG’s).

PPS12 (Local Development Frameworks) sets out the requirements to produce the new Local Development Frameworks, which are intended to streamline the planning process but still provide an opportunity for issues, including landscape, to be integrated at various levels. The local development framework sets out, in the form of a ‘portfolio’, the local development documents which collectively delivers the spatial planning strategy for a local planning authority’s area. The new system demands frontloading of key strategic decisions and stakeholder involvement/consensus much earlier in the process. The use of information early on, including landscape character assessment, is crucial to good decisions being based on a robust, credible, accessible and consistent evidence base.

An overall vision and set of objectives will include consideration of the environmental matters including landscape. The core strategy should set out the long term spatial vision and the strategic policies required to deliver that vision. These policies should be clear and concise. If it is not possible to identify site specific allocations, criteria-based policies should be included to establish a framework for assessing proposals.

This suggests that criteria-based policies are not encouraged in the core strategy. However, the guidance then goes on to say that a limited suite of generic development control policies should be prepared which may be included as part of the core strategy or in a separate development plan document. These are intended to be topic-related including those protecting landscape and natural resources, nature conservation and addressing visual impact. Generic policies are not intended to repeat national planning policy statements but should explain how they apply to the local area. Policies should define clearly the circumstances in which planning permission will, or will not, be granted and should focus on achieving the outcomes required to meet the authority’s spatial vision. Experience indicates that policies and supporting text will need to be short and focused and will need to refer to supplementary planning documents (SPDs) and area action plans (AAPs) for greater detail, at least in due course.

PPS 1 (Delivering Sustainable Development) sets out the overarching planning policies on the delivery of sustainable development through the planning system. Sustainable development is the core principle underpinning planning, at the heart of which is the simple idea of ensuring a better quality of life for everyone, now and for future generations. A key objective of Government for the planning system is ‘protecting and enhancing the natural and historic environment, the quality and character of the countryside, and existing communities’ (paragraph 5). Good design, including appropriate landscaping, is central to the achievement of sustainable development and to ensure development is visually attractive.

PPS7 (Sustainable Development in Rural Areas) applies to rural areas, including country towns and villages and the wider, largely undeveloped countryside up to the fringes of larger urban areas. The key principles of this PPS state that new building development in the open countryside away from existing settlements, or outside areas allocated for development in development plans, should be strictly controlled. The overall aim is to protect the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and so it may be enjoyed by all.

In relation to countryside protection and development in the countryside, paragraph 15 states: ‘Planning policies should provide a positive framework for facilitating sustainable development that supports traditional land-based activities and makes the most of new leisure and recreational opportunities that require a countryside location. Planning authorities should continue to ensure that the quality and character of the wider countryside is protected and, where possible, enhanced. They should have particular regard to any areas that have been statutorily designated for their landscape, wildlife or historic qualities where greater priority should be given to restraint of potentially damaging development’ (paragraph 15).

With regard to local landscape designations PPS7 states: ‘The Government recognises and accepts that there are areas of landscape outside nationally designated areas that are particularly highly valued locally. The Government believes that carefully drafted, criteria-based policies in LDOs, utilising tools such as landscape character assessment, should provide sufficient protection for these areas, without the need for rigid local designations that may unduly restrict acceptable, sustainable development and the economic activity that
underpins the vitality of rural areas.’ (Paragraph 24).

‘Local landscape designations should only be maintained or, exceptionally, extended where it can be clearly shown that criteria-based planning policies cannot provide the necessary protection. LDOs should state what it is that requires extra protection, and why. When reviewing their local area-wide development plans and LDOs, planning authorities should rigorously consider the justification for retaining existing local landscape designations. They should ensure that such designations are based on a formal and robust assessment of the qualities of the landscape concerned.’ (Paragraph 25).

In overall terms, this guidance means that landscape assessments must be robust and comprehensive in defining the landscape resource and how it should be conserved and/or enhanced.

PPS 22 (Renewable Energy) sets out the Government’s policies for renewable energy sources, which includes technologies such as onshore wind generation, hydroelectrics, photovoltaics, passive solar, biomass and energy crops, energy from waste (but not energy from mass incineration of domestic waste), and landfill and sewage gas. With regard to local landscape designations, the PPS gives guidance on locational considerations to be taken into account when considering planning applications: ‘Local landscape and local nature conservation designations should not be used in themselves to refuse planning permission for renewable energy developments. Planning applications for renewable energy developments in such areas should be assessed against criteria based policies set out in local development documents, including any criteria that are specific to the type of area concerned.’ (Paragraph 15).

1.2 Regional Spatial Strategy – The Yorkshire and the Humber Plan

The Plan guides development up to 2021 and beyond. It influences and is influenced by the economy, housing, transport, the built and natural environment, and much more. The Plan provides a broad and long term development strategy for the Yorkshire and Humberside Region. It must be taken into account by local authorities in preparing their Local Development Frameworks. It will also be an important influence on housing, economic development, waste, renaissance and other strategies, and guide the investment plans and priorities of a range of agencies and infrastructure and service providers. Local Development Documents prepared under the Planning and Compulsory Purchase Act 2004 must be in general conformity with the Plan. The Plan will form part of the statutory ‘development plan’ for each district or unitary local authority, and must be taken into account when determining planning applications. The Plan will have the same statutory status when it replaces the ‘December 2004 RSS’. The Draft for Public Consultation was published in December 2005, and will be subject to an Examination in Public commencing on 12th September 2006.

With regard to the landscape of the Region, the Draft Plan recognises the importance of the need to conserve and enhance regionally distinctive landscape character and quality, improve public access to the countryside, and address degraded and despoiled areas that detract from the Region’s character. Enhancement is seen as including new woodland planting, restoration of field boundaries, reclamation of derelict sites, and sympathetic development. Policy ENV 10 states:-

**The Yorkshire and the Humber Plan: Policy ENV10 LANDSCAPE**

The Region will safeguard and enhance landscape that contributes to the distinctive character of Yorkshire and the Humber. Development strategies, plans and decisions will maintain and enhance the following landscapes and related assets of regional, sub-regional and local importance:

| A | Yorkshire Dales and North York Moors National Parks and the Nidderdale, Howardian Hills, Forest of Bowland, North Pennines and Lincolnshire Areas of Outstanding Natural Beauty |
| B | Historic landscapes, parks and gardens |
| C | Derelict and despoiled urban fringe landscapes, especially in the South Pennines |
| D | Degraded rural landscapes, especially in parts of the Vale of York and Humberhead Levels |
| E | The coastal landscapes of the East Coast and the Humber |
| F | Walking, cycling and horse trails, and the corridor of the national trails (Cleveland Way, Pennine Way, Pennine Bridleway, Yorkshire Wolds Way) and important inter-regional routes (Coast to Coast, Trans Pennine Trail). |

The purpose of Policy ENV10 is to recognise and build on the distinctive landscape character of the Region, and help parts of the countryside remain an important natural resource. The benefits of this approach
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are seen as including cross-boundary consistency, support for tourism and agricultural diversification (including biofuels), support for suitably located and designed development to provide adequate housing and renewable energy sources to meet local needs.

By 2021 anticipated outcomes are seen as including the safeguarding and enhancement of the Region’s distinctive landscape character and quality, especially within regeneration schemes; high quality public access will have been provided to the countryside; degraded and despoiled areas that detract from the Region’s character will have been restored.

Paragraph 15.79 states: ‘Local authorities need to undertake local landscapes/character assessments in line with PPS7 prior to Local Development Documents reviews, possibly on a sub-regional basis with other local authorities; determine type and location of development, and priorities for landscape enhancement, and development of design policies to ensure propriety of development to context; identify national trails, long distance footpaths and other informal outdoor recreation opportunities (e.g. waterways) to help develop recreational trails network within the Region and ensure cross-boundary consistency, encourage policy guidance on approach, design, and materials; encourage use of Town/Village Design Statements and Action Area Plans; encourage traditional styles/skills so as to retain local character/distinctiveness.’

1.3 Doncaster Unitary Development Plan

The Doncaster Unitary Development Plan (UDP) is the current statutory development plan for the Borough, and covered the period 1986 to 2001 (although it provides for some development requirements beyond this period). Most of the UDP policies have been saved for a period of three years. Some will be replaced by the Core Strategy; many others are expected to remain in force until superseded by the various other DPDs.

The UDP was adopted on 21st July 1998. Whilst the UDP will be superseded by the LDF, it remains as a useful reference point in understanding landscape issues and the framing of policies in the LDF.

The UDP contains a general policy on protection of the countryside and landscape, additional protection of areas of special landscape value, and priority for landscape improvement to the urban edges of settlements. Policy SENV 1 states:

**UDP Policy SENV1: PROTECTING THE COUNTRYSIDE.** The Borough Council will protect the countryside from unnecessary and inappropriate development. Green belt and countryside policy areas are designated within which only uses appropriate to a rural area will be permitted. Such uses will be expected to conserve and wherever possible enhance the environment.

Other specific policies deal with Areas of Special Landscape Value (ENV 17), Landscape Conservation (ENV 18 and ENV 19), and Parks and Gardens of Special or Local Historic Interest (ENV 20):

**UDP Policy ENV17:** Within areas of special landscape value, as defined on the proposals map, protection and enhancement of the landscape will be the overriding factor in considering proposals for development. Such development as is acceptable will only be permitted where it would not detract from the visual character of the area and where the highest standards of design and landscaping are employed.

**UDP Policy ENV18:** The Borough Council will promote the conservation and enhancement of the borough’s landscape and seek to maintain local variations in that landscape. Wherever possible, woodlands, grasslands, wetlands and other habitats of landscape importance, together with valuable existing landscape features such as hedgerows, trees, copses, ponds, watercourses, historical sites, estate features, enclosure landscapes, stone walls and other built heritage features will be protected and enhanced.

**UDP Policy ENV19:** The Borough Council will develop a landscape strategy to provide a co-ordinated approach to conserving and enhancing the urban and rural landscape of the borough.

**UDP Policy ENV20:** Within parks and gardens of special or local historic interest as defined on the proposals map new development, including changes of use of existing land and buildings, will not be permitted if it would detract from the character or appearance of the area by virtue of its nature, scale or appearance or for example by the removal of trees or other important landscape features. Proposals in proximity to and / or visible from parks and gardens of special or local historic interest will not be permitted where the character of such areas would be adversely affected.
1.4 Doncaster Local Development Framework

The Doncaster Local Development Framework (LDF) will gradually replace the UDP as the statutory development plan for the Borough to 2021. It will comprise a number of Development Plan Documents (DPDs) produced over time and in accordance with the procedures introduced by The Planning and Compulsory Purchase Act 2004. The LDF will

- Set down the strategic and local planning policies necessary to guide and co-ordinate land use and development
- Contain the policies necessary to protect the built and natural environment
- Form the basis for determining planning applications and
- Provide the Doncaster Borough Strategy with a spatial framework

The Core Strategy is the first of the DPDs that will form the LDF. It provides the overall strategy through its core strategic policies and proposals. It does not allocate sites for development or contain all the policies necessary for development control. The Core Strategy is now at the Preferred Options report stage, which was published for public consultation in December 2005. It sets out the Spatial Vision for the Borough to 2021, the life span of the Plan, together with the spatial objectives and strategic policies and proposals to deliver that vision. The vision is based upon the principles of sustainable growth and renaissance, high quality design, and preserving and enhancing the natural and built heritage of the Borough:

“Realising the Borough Strategy vision would make the period up to 2021, the life span of this plan, one of the most exciting periods of development in the Borough's history. The Core Strategy provides the strategic level policies and proposals for this sustainable growth and renaissance; it is based on the following spatial vision for Doncaster in 2021:

Doncaster Borough’s Vision for 2021

By 2021:

- Doncaster Borough will have rates of economic activity, employment and earnings that are at, or above, the regional average and will be experiencing net in-migration and steady population growth. High quality housing development will be continuing to meet the requirements of this in-migration as well as trend based household formation and identified housing need; the Borough's secondary schools and many of its poorer recreation and other community facilities will have been renewed.
- All major development will have been distributed in accordance with a settlement hierarchy which supports the sustainability of existing communities and the renaissance of urban areas; development will have embodied the best principles of sustainability and high quality design providing new buildings and spaces that contribute to a sense of place; the Borough's built and natural heritage will have been preserved and enhanced.
- The Main Doncaster Urban Area will have experienced an urban renaissance; the transformational projects will have been successfully implemented; new high quality residential and commercial uses will have been developed primarily on brownfield land; areas of unsustainable housing will have been replaced or brought up to modern standards; there will have been some modest and sustainable urban expansion.
- Doncaster Town Centre will have seen an expansion of its retail core and the development of offices, leisure, cultural and civic facilities of city quality and be a retail and leisure destination of regional and wider significance.
- Mexborough, Thorne, Adwick-le-Street/Woodlands, Arthington, Askern and Conisbrough will have seen significant growth and qualitative change through the development of brownfield sites for housing and mixed uses, housing renewal and associated environmental improvements. Mexborough and Thorne town centres will have a much greater retail and leisure offer.
- Rossington and Stainforth/Hatfield (including Dunscroft/Dunsville) will have seen qualitative improvements including housing renewal and improved district centres plus the implementation of new motorway links, and growth associated with these and the removal of key development constraints.
- Edlington, Denaby and Moorlands will have seen significant qualitative improvements including major housing renewal and associated urban remodelling, redevelopment of cleared sites and improved district centres but will not have expanded significantly beyond existing settlement limits.
- Bawtry, Tickhill and Carcroft/Skellow will have seen only modest development within existing settlement
limits including small-scale housing renewal where necessary, quality urban infill, environmental improvements and enhanced town/district centres.

- Doncaster’s villages will be the same size as today with (in the larger defined villages) only minor development to meet local affordable housing needs and quality infilling consistent with maintaining village character.

- New strategic employment sites will have been implemented along the M18 corridor and elsewhere on sites accessible to communities and will be delivering high quality jobs that local people are able to access.

- Doncaster will have enhanced its position of strategic importance in the national transport infrastructure with increased road and rail freight facilities utilising the Borough’s excellent motorway and rail links including to the Humber Ports, East Coast Main Line improvements and an expanding international airport.

- Robin Hood Airport will have reached its 2014 capacity and secured additional capacity beyond this; it will be served by a road link from the M18 and a rail link from Doncaster Town Centre and regular fast bus services.

- More and better quality sustainable transport links will be in place connecting communities particularly the more deprived communities and including those in rural areas to Doncaster Town Centre and strategic employment sites.

- Current highway and other infrastructure constraints on economic growth will have been removed.

- Housing renewal programmes and associated urban remodelling will have been successfully implemented within the Pathfinder Area, Green Corridor, central urban areas of Doncaster and the M18 corridor.

- The general extent of the green belt will be unchanged.

- The countryside across the Borough will be more attractive, accessible and vibrant with new woodlands, farm based rural diversification projects, and the sensitive development of recreation facilities and tourist accommodation; new development will have reinforced the local distinctiveness of the different landscape character areas.

The Core Strategy policies and proposals are presented under ten themes, each with a set of objectives, policy proposals and written justification.

There are a number of Core Strategy policies which impinge on or refer to landscape issues, which are identified below. These issues have been taken into consideration in recommending landscape-related policies, advice and further actions that might be taken in the future.

- CS-S4 Environmental improvements on cleared sites in Main Urban Area
- CS-S9 Environmental improvements on cleared sites in Potential Growth Settlements
- CS-S11 Extensive landscaping within the Hatfield/Stainforth ‘triangle’
- CS-S12 Environmental improvements in Limited Growth Settlements
- CS-H1 Applications for large housing sites will be tied to Master Plans
- CS-H7 Landscaping requirement for Gypsy and Traveller sites
- CS-E8 Creation of new woodlands
- CS-N3 Protection of nature conservation sites
- CS-N4 Retain protection of ASLVs and Parks and Gardens of Historic Value, incorporate sufficient landscape features in development to allow them to mature, demonstrate how landscape management arrangements are put in place
- CS-N5 Retain and enhance landscape features. Create indigenous and accessible woodland to meet the Forestry Commission’s national standard by 2010 and exceed it by 2021
- CS-N6 Flood mitigation measures
- CS-N7 Development causing unacceptable air, water, land, noise, smell, light or other nuisance not permitted
- CS-N8 Renewable energy where no unacceptable environmental impacts
- CS-B1 Development to improve local environment and create distinctive sense of place
- CS-B2 Sustainable techniques and materials including habitat creation, landscaping, management, living roofs, suds, quality
- CS-B3 Ancient monuments – preserve and enhance
1.5 Proposed Landscape Policies and Guidance

Policies must reflect the national policy guidance, the emerging Regional Spatial Strategy (see section 6.2), and the vision for the Borough as set out in the Core Strategy (see section 6.3). Policies need to be robust enough over time to withstand the test of Public Inquiry and the appeals process.

Policies, including some alternative formats, are suggested below under the headings of vision, key objectives, core policies and development control policies.

1.6 The Vision

The vision should include a statement involving the landscape such as:

Doncaster Borough will be a place where its existing locally distinctive and valued natural and historic landscapes and built environment will be strengthened, conserved and restored and new high quality landscapes created over time supporting a high quality of life.

References to the landscape should be tied into policy at the highest level reflecting the importance attached to the Community and Spatial strategies for the Borough.

1.7 Key Objectives

From the Core Strategy policies and proposals listed in section 9.4 above, various strands of planning policy, development control and land management impinge on landscape character and capacity, which warrant separate identification. These include countryside issues, including planning, management and sustainable rural economy implications.

With regard to landscape, the following key objectives can be identified:

- Sustainable Development: this includes conserving natural resources including the environment.
- Landscape Character: the protection, conservation and enhancement of the varied landscape character within the Borough which reflects landscape sensitivity and the promotion of local distinctiveness.
- Countryside/Rural Strategy: the protection of the countryside for its own sake while encouraging sustainable development that supports the rural economy and communities and conserves the countryside.
- Settlement Character: the protection, conservation and, where possible, enhancement of locally distinctive and historic character of the urban and rural settlements and their settings within the Borough and to retain the separation between settlements.
- Design: the promotion of high quality design and a rigorous design process that embodies sustainable development and management principles, taking full account of site and context, respects and enhances the character of the area, and provides for inclusive access.
- Nature Conservation and Heritage objectives: should be considered separately, and are outside the scope of the study brief.
1.8 Core Policies

Core policies should be developed ideally related to the above objectives. The following policies are proposed with landscape-related wording, recognising that in practice these may be developed further to reflect other policy factors and considerations.

PPS12 is not prescriptive in terms of how policies should be drafted for the core strategy, although it would appear that a limited range of clear and concise policies are preferred.

The various issues relating to landscape character need to be covered to achieve clarity. However, disaggregating the issues too far leads to an increased number of policies which may be cumbersome to include in the core strategy. An alternative is to include an all-embracing character policy in the core strategy and put the disaggregated policies into a separate DPD document.

These alternative approaches are set out below.

1.9 Suggested Alternative 1

Policy CP1 (Alt1) Sustainable Development

Development will be permitted provided that it:

Follows sustainable development principles, seeking prudent use of land, water, air and energy resources, seeking to minimise pollution and waste generation, and promoting social equity, quality of life, inclusive access, and sustainable construction techniques and use of materials [etc].

Policy CP2 (Alt1) Landscape Character

The landscape character and local distinctiveness of the Borough shall be conserved, restored and strengthened wherever possible. Proposals for development shall take into account the local distinctiveness and the sensitivity to change of distinctive landscape character areas. Development will be permitted provided that it conserves, restores and where possible strengthens:

i) The landscape character and local distinctiveness of the area including its historical, biodiversity and cultural character and its tranquillity:

ii) The distinctive setting of, and relationship between, settlement and buildings and the landscape including important views.

iii) The nature conservation value of the area including the pattern of woodland, forests, trees, field boundaries, vegetation and other features.

iv) The special qualities of rivers, waterways, wetlands and their surroundings.

v) The topography of the area including sensitive Skylines, hillsides and geological features.

vi) Opportunities for the creation of high quality new landscapes

Landscape character is an important element contributing to quality of life in any area. It is concerned with the positive, distinct, recognisable and consistent pattern of elements that make each landscape and settlement different. These elements are defined by geology, landform, drainage, vegetation cover, settlement pattern and land use. The landscape character and quality of Doncaster’s countryside varies considerably. To the west and south lies the attractive belt of Magnesian limestone country bisected by the Don and Went Gorges, well wooded and mostly intensively farmed. To the east is the Bunter sandstone, less hilly and quite extensively farmed. A much larger and generally flatter landscape, crisscrossed by drainage ditches and with extensive peat moors lies to the north-east. Substantial portions of these areas are designated as Areas of Special Landscape Value, and are considered worthy of protection and enhancement. Distinctive local elements such as hedgerows, trees, copses, woodlands, river valleys, ponds, watercourses, historical sites, estate features, enclosure landscapes, stone walls and other built heritage features all contribute to the overall character. The tranquillity of significant areas of undisturbed countryside also contributes substantially to the quality of the countryside and its enjoyment.

Information from this current landscape character capacity study and the landscape character assessment undertaken in 1994 will provide the evidence base for the preparation of supplementary planning guidance concerning landscape character and local distinctiveness. This will set out the key characteristics of each landscape character area and provide guidance on how the overall character of the areas concerned
can be conserved, restored and where possible strengthened through the creation of new high quality landscapes.

**Policy CP3 (Alt1) Settlement Character**

The individual character, identity and amenity of settlements are an important feature of the Borough. Development will be permitted provided that it conserves, restores and where possible strengthens:

i) The positive character of the settlement including its historic core pattern and structure including Conservation Areas and their settings.

ii) The overall setting of the settlement, important views and green corridors.

Opportunities will be taken to conserve and enhance landscape, amenity and value of the area as open countryside.

Information from this current landscape character capacity study and from earlier studies such as the South Yorkshire Settlement Assessment, Final Report (Jacobs Babtie, May 2005), will contribute to the evidence base for the preparation of supplementary planning guidance concerning settlement form and character.

**Policy CP4 (Alt1) Countryside Policy Areas**

The area outside urban development boundaries and defined as Countryside Policy Areas on the Key Diagram shall be an area of development restraint which will be protected for its own sake. Development will be permitted in the countryside provided that it supports the rural economy and communities, and where it:

- Is necessary for the purposes of agriculture, farm diversification, forestry, recreation, tourism and other enterprises with an essential requirement to locate in the countryside, or
- Provides facilities which are essential to meet the needs of local communities which cannot be accommodated satisfactorily within built up areas, or
- Provides for new uses in existing rural buildings consistent with the building’s scale, massing, character and location, or
- Provides for the extraction of minerals or the disposal of waste.

In particular, isolated new houses and conversions in the countryside will require special justification.

Doncaster Borough has extensive areas of attractive countryside which should be protected for their own sake. However, it is recognised that the countryside is also a home and workplace for many communities, so that there is a need to support farming and the rural economy and to maintain sustainable communities.

Countryside Policy Areas are shown on the Key Diagram. Villages and smaller settlements with no development boundary are treated as countryside for policy and development control purposes.

New development that can revitalise and enhance a range of economic, social and community activities will be supported provided it is appropriate in terms of scale, character and location. Some limited development may be appropriate within or next to rural settlements.

Changes in funding for agriculture breaks the links between payment and agricultural production. This will result in a change in farming practices. Appropriate farm diversification and re-use of associated buildings will be supported in order to help provide income for farmers and maintain positive management of the land. Schemes may include tourist accommodation, recreation facilities, craft workshops and the processing and sale of local food products. It may also include more diverse activities such as composting utilising redundant farm buildings, biomass, forestry and woodland planting, and wind farms.

**Policy CP5 (Alt1) Areas of Special Landscape Value**

Refer to Figure 13: Potential additional ASLV designations in appendix

Within Areas of Special Landscape Value, as defined on the Key Diagram, great weight will be given to the conservation and enhancement of the landscape. The environmental impacts and effects of all development will be a major consideration. Development will be restricted to:

i) change of use of existing buildings; and/or

ii) development which is appropriate to the economic and social well-being of the immediate locality;
iii) development which is desirable for the understanding and enjoyment of the amenities of the area;

And provided the proposal:

a) Does not cause demonstrable harm to, conserves, restores and, where possible, strengthens the natural beauty and quality of the landscape, its tranquillity and amenity and the elements that contribute to its character.

b) Is designed to a high standard to enhance the locally distinctive character of the landscape and settlement form and pattern using appropriate building materials and landscape treatment;

c) Contributes to sustainable development through building design, materials and siting, balancing this with a sensitive response to character and location;

d) Is of appropriate, normally small, scale in terms of physical size, activity and traffic generation;

e) Is located to minimise impact on the character of the area and, where possible, close to and in association with existing buildings.

Major developments will not be permitted except in very exceptional circumstances. Proposals shall be subject to the most rigorous examination and will require to be demonstrated to be in the public interest.

Note: the following provisions could be added:

Consideration of such applications will include an assessment of:

i) the need for the development, in terms of national considerations, and the impact of permitting it or refusing it upon the local economy;

ii) the cost of and scope for developing elsewhere outside the area or meeting the need for it in some other way;

iii) any detrimental effect on the environment and the landscape, and the extent to which that should be mitigated; and

Major developments that are permitted will be carried out to high environmental standards through the application of appropriate conditions

1.10 Suggested Alternative 2

The core policies above are clear cut but it is accepted that they maybe regarded as too numerous or too long for core policies. An alternative approach is suggested below, combining different but related themes. Possibly some of the above landscape and settlement character policies could be included as ‘second order’ development control policies and contained in DPD’s.

Policy CP2 (Alt2): Character

The landscape and settlement character of the area is of fundamental importance to the quality of life of the Borough. Development will be permitted, provided that:

i) Landscape character is protected, conserved and, where possible, enhanced taking into account its key characteristics, local distinctiveness, sensitivity and tranquillity.

ii) The settlement character is protected, conserved and, where possible, enhanced taking into account its distinct identity, historic core pattern, setting and separation from adjacent settlements in some places.

See relevant policies above for supporting text.

Policy CP4 (Alt2): Countryside Policy Areas

As in Alternative 1

Areas of Special Landscape Value

During the landscape capacity study it was confirmed by DMBC Stake holder Group that the areas covered by ASLV designation retain their high quality, distinctive, relatively undisrupted landscapes and are worthy of continued conservation. However, there were also areas outside of the ASLVs which appeared to have similar qualities to the landscape within the area. Figure 13 shows some areas where possible extensions or additions to these areas could be investigated as a further piece of work.
The continued use of the ASLV designation in Doncaster’s landscape planning policy is open to debate, with Planning Policy Statement 7 (PPS 7) favouring criteria based policies over locally designated areas. However, it appears that the current ASLV designation is well known and supported in the Borough. It is also straightforward for developers and others who may not be familiar with Doncaster Borough to identify areas of particularly high landscape value. However, as recognised during the landscape capacity assessment, the areas outside of the ASLVs with similar qualities may be less well protected. The ASLVs were reviewed against a set of criteria in the 1994 landscape assessment and these could form the starting point for development of criteria-based policies. However, a suggested way forward may be to combine some elements of both by developing criteria based policies which are supplemented by a plan indicating sensitive areas in broad terms.

Within Areas of Special Landscape Value, as defined on the Key Diagram, protection and enhancement of the landscape will be the overriding factor in considering proposals for development. Such development as is acceptable will only be permitted where it would not detract from the visual character of the area and where the highest standards of design and landscaping are employed.

See relevant policies above for supporting text.

1.1 Other Core Policies

Other policies which may be included as core policies which are of a complementary nature are:-

• Policy CP6: Landscape Design for New Developments [making reference to character, local distinctiveness, design process and use of design statements to guide planners and developers]
• Policy CP7: Nature Conservation
• Policy CP8: Heritage [including listed buildings, Conservation Areas, etc]

Recommendations for the draft contents of CP6 are presented in the following section of the Study Part 3.

Policy CP5 (Alt2): Areas of Special Landscape Value

Weight will be given to the particular qualities and features of locally designated Areas of Special Landscape Value, nature conservation, historic or geological importance, as shown on the Key Diagram. There will be a stronger policy of restraint and proposals for development affecting these areas will be subject to rigorous examination. Development will be permitted provided that it does not cause demonstrable harm to, and conserves, restores and strengthens where possible their special qualities and features. Development will:

i) Be designed to a high standard and located carefully with appropriate mitigation to provide net benefit where possible;

ii) Contribute to sustainable development through building design, materials and siting, balancing this with a sensitive response to character and location;

iii) Be of appropriate scale in terms of physical size, activity and traffic generation.
2.0 Policy guidance for development types

The emphasis of core policies is to lay the foundation of a framework for policies for development control recognising that in practice these may be developed further to reflect other policy factors and considerations.

Emerging policies will find expression in DPDs prepared on different timescales and with varying emphasis to reflect the subject matter involved, differing pressures for development, and reflecting the experience in practice of their counterpart policies in the currently adopted UDP.

For these reasons whilst the policy guidance from this Study will emphasise the significance of the landscape character and its capacity to accommodate different development types, the finally determined policies are likely to reflect other development considerations other than landscape character.

The development types identified in the Study brief are considered below under the appropriate Development Plan Document.

2.1 Minerals Development Plan Document (Minerals DPD)

The Minerals DPD will identify site-specific requirements for meeting minerals needs across the whole of Doncaster District.

Within the District a number of different minerals are worked and mineral reserves can be identified for future exploitation.

Different mineral types have different characteristics which need to be reflected in the approach to policy development and the capacity of the landscape to accommodate their development. These are as follows:-

Sand and gravel (site designation policy). Potential reserves/sites will be defined with reference to BGS surveys, the Local Biodiversity Action Plan and the outputs of this Study. Site specific proposals will also be subject to a criteria based policy which proposed developments will need to satisfy on all counts.

Industrial minerals (site designation policy). Currently there are three sites: Warmsworth Quarry (limestone – possible extension into farmland to the west); Wroot Road (turf dressings); Cadeby Quarry (limestone – future expansion unlikely). Each site may also require specific criteria to be satisfied to reflect the particular circumstances of the mineral operations involved.

Clay (criteria based policy). Potential reserves mainly in the north of the District and could be in conflict with Areas of Special Landscape Value III and V. Criteria will need to reflect value of character areas, need for mineral working, opportunities for ‘wet’ restoration for recreation and conservation purposes, and mitigation measures to be applied.

Coal (criteria based policy). Potential shallow reserves for opencast coal mainly in the far west of the District, and could be in conflict with locally designated Areas of Special Landscape Value I, IV and VI. Criteria will need to reflect value of character areas, need for mineral working, environmental benefits, and mitigation measures to be applied.

Peat (criteria based policy). Large scale extraction now banned on Thorne and Hatfield Moors. Any compensatory areas would need to be subject to sensitive scheme of working reflecting the conservation/landscape characteristics of the locality, and mitigation measures to be applied.

Aggregate limestone quarrying (site designation policy). Current site at Hazel Lane Quarry with potential for an extension based upon grounds of reasonable competition. Site may also require specific criteria to be satisfied to reflect the particular circumstances of the mineral operations involved.

2.2 Waste Development Plan Document (Waste DPD)

The Waste DPD will establish appropriate spatial policies for the handling and disposal of waste within the District and the identification of specific sites required for these purposes.

The framework for waste management is likely to be based upon the hierarchy of increased recycling/re-use of recovered materials, composting and landfilling as a last resort or for the disposal of residual wastes e.g. from incineration.

Recycling facilities are likely to be on a site designation based, and need not be considered in isolation from other industrial uses.
**Part 2: Planning Policy Context and Recommendations**

**Compost barns on farms** are likely to be criteria based, and the Study provides an overview of the capacity of the landscape to accommodate this type of development.

**Landfill** – which includes land-raising, is likely to be opposed in many parts of the District because of aquifers and locally designated Areas of Special Landscape Value. The policy base is likely to be site specific, and the only site presently identified is the former power station site at Thorpe Marsh.

Traditionally former mineral working sites, particularly quarries and open cast voids, have provided a resource for landfilling. With EU directives and national policy guidance requiring less dependency on this as a solution to the disposal of waste, some former mineral extraction sites may provide an alternative solution for the siting of recycling, incineration or composting facilities. Warmsworth Quarry and Cadeby Quarry are examples of former quarries that will be evaluated in terms of their potential for this purpose.

### 2.3 Built and Natural Environment Development Plan Document

The Built and Natural Environment DPD will identify policies required to protect or enhance areas important for the Built Environment, and the areas to which they apply. It will also identify sites important for nature conservation and policies to protect and enhance them. It will also identify site-specific requirements for community needs and the reuse of surplus land currently used for community purposes.

The scope of LDF Core Strategy Preferred Options (December 2005), and in due course the Core Strategy Development Plan Document, includes Renewable Energy, Large Scale Forestry and Landscape Character policies. The policy format for each of these categories is considered as follows:

- **Renewable Energy** (criteria based policy). Wind power/anemometers development will be criteria based rather than site designation based. The Study provides a framework of the type of existing landscape in particular areas and an overview of capacity to accommodate the types of development. There is some investigative work carried out by developers around Thorne Moors, Maltby, Brodsheart and Harworth Colliery. Ecological issues include bird strike and disturbance to habitat during construction and from access roads.

- **Biomass** (criteria based policy). Willow coppicing and giant elephant grass planting are options to be considered. As a criteria based policy, issues for consideration include impact upon the landscape and wildlife; planting of non-native species; sensitive design and location of generator plants on-site for burning biomass.

- **Large Scale Forestry** (site designation based). The location of potential planting areas will be determined with reference to the Woodland Strategy and Biodiversity Plan, and other stake holders eg Forestry Commission; South Yorkshire Forest.

- **Landscape Character** (site designation and criteria based policies). The Study informs the review of the current landscape classification of the District, and enhance the available evidence for more specific area based and criteria based policies. Policies will seek to protect and enhance the landscape, and specify criteria to be satisfied when considering specific development proposals and mitigation measures to minimise impacts of development.

### 2.4 Housing Development Plan Document

The Housing DPD will identify future housing sites to meet the housing requirements for Doncaster up to 2021, and to set out policies to manage the housing trajectory to meet this requirement, and to control housing developments.

In accordance with the principles set out the Core Strategy Preferred Options report (policy CS-H1), preferred areas of search for extensions to the main urban areas have been identified on the LDF Key Diagram. Other categories of settlement offering potential for growth and limited growth are also identified. These are listed in the Guidance Note (8th February 2006).

The Study confirms in broad terms whether the identified areas have the capacity to accommodate large scale housing development without causing detrimental effects on the landscape character of those areas.

Policies are likely to be a mix of site designation and criteria based policies.
2.5 Employment Development Plan Document

The Employment DPD will identify future employment sites to meet the employment land requirements for Doncaster up to 2021. It will identify the location of new strategic employment sites and preferred areas of search for them.

Preferred areas of search for new strategic employment sites have been identified on the LDF Key Diagram and are listed in the Guidance Note (8th February 2006).

Policies are likely to be site designation based, but supplemented with criteria based policies as necessary.

3.0 Recommended Areas for Further Work

Area Action Plans (AAPs)

These can be prepared for areas of significant change or conservation. It would be assumed that these would include areas around the strategic growth towns or areas particularly sensitive to change.

Supplementary Planning Documents (SPDs)

These will not be subjected to independent examination but instead to rigorous procedures of community involvement. They can include generic landscape or site specific guidance. They will be referenced by core policies. The kinds of information available to support a district landscape SPD include county and district landscape character assessments, Historic Landscape Characterisation (HLC) and landscape sensitivity studies, and material concerning local distinctiveness of the built environment and the settlement pattern. These documents vary in terms of presentation and detail. Some are GIS-based and may not be suitable as SPD in themselves. A summary landscape SPD may be appropriate to tie the evidence base together. The purpose of this could be to act as the portal to the landscape information setting out how and when it should be used and providing summary information on the landscape resource.

Landscape Design Guidance for New Developments SPD Recommendations

This report provides a number of recommendations as to the content of a future landscape SPD, expanding on Doncaster MBC’s existing supplementary planning guidance note Landscape Guidance for Development Sites in Doncaster. These recommendations follow in the Study - Part 3.

Further Search for Areas with Capacity for Development

This assessment has identified the broad capacity of the landscape to accommodate a number of different types of development without adverse impacts on its character. Detailed assessments have identified the landscape capacity of specific locations for housing development, strategic employment and mineral workings. If further detailed search for areas with landscape capacity for development is required, then this should preferably be carried out by a landscape architect. The assessment should be based on an understanding of the key characteristics which are important in creating the landscape character of an area; focusing on areas identified in the broad landscape capacity assessment as having high or moderate capacity; and the factors contributing to landscape capacity for each development type listed in the development capacity summary.

Environmental and Visual Impact Assessments

The landscape capacity assessments carried out for each landscape character area within Doncaster Borough are not a substitute for carrying out and Environmental Impact Assessment should this be required as part of the planning application process. However, the information contained in the study could provide background information to help inform the Landscape and Visual Impact Assessment chapter. This report provides a number of recommendations as to the content of a future landscape SPD, expanding on Doncaster MBC’s existing supplementary planning guidance note Landscape Guidance for Development Sites in Doncaster.
Part 3: General Landscape Design Principles for Development Types
1.0 Recommendations for Future Core Strategy Policy CP6

Supplementary Planning Document - Design

In this section, the likely impacts that each development type may have on the Borough’s landscapes have been considered individually and a series of general design principle recommendations have been made that if employed, would potentially increase the capacity of the landscape to accommodate each individual development type.

1.1 Compost Barns

The increasing demand for larger scale composting sites has the potential to become a more common component of the Doncaster landscape, and represent a relatively small form of development type. A range of design principles may be employed to reduce visual impact of the development of compost barns including the following:

**Design principles for development associated with composting include:**

- Conversion of existing barns into composting facilities. Maintain the existing compact grouping of buildings, locating new buildings amongst existing structures or juxtaposed with mature tree and shelterbelt cover where existing. Consider relationship to key views, eg locate adjacent or to rear of shelterbelts or to rear of existing buildings, avoid disrupting sightlines to attractive existing features;
- for new barns follow traditional building scale and form where possible. Use traditional materials to reflect existing character, and in proportions which relate to individual farm building identity;
- use colours and forms which reflect vernacular buildings, or which are recessive in character. Consider use of darker, earthy colours where structures are seen against the ground or lighter colours where seen against the sky;
- consider new/replacement tree or shelterbelt planting where cover is absent or likely to degrade through over-maturity.

The reader is referred to the Doncaster Landscape Assessment for detailed guidelines with regard to the characteristic of the landscape around areas with capacity for compost barn development.

1.2 Mineral Extraction and Landraising

Mineral extraction and landfill activities form an important historic and current element of the Doncaster landscape. Using Landscape Institute LVIA guidelines the following broad principles should be considered during the design and impact assessment stages of proposed mineral extraction or landraising operations:

- Avoid loss of or impact on setting of key landscape features (eg wildlife or heritage site, area of high landscape value);
- Consider visual effects of proposal during operational stage including impact on the wider landscape and on features where views to the site may be obtained (eg settlements, outlying residential property, rights of way, recreational sites, roads) and design proposal to minimise impact on these features.
- Consider long term effects of restored site on surrounding landscape character.

**Design principles for development associated with mineral extraction and landraising include:**

A range of design principles may be employed to reduce visual impact during the operational stages of mineral extraction and landraising activities, including the following:

- Design of the site itself (eg avoid breaking skyline, avoid exposing working face to sensitive external views);
- Phasing of extraction/disposal works and restoration, to minimise the extent of workings active or visible at any one time, or to reduce impact on specific views;
- Siting of haul roads, plant parking areas, crushing/processing plant, offices and other ancillary features in less visible or hidden areas;
- Consider colour, form and massing of ancillary features to reduce visual presence where these features are unavoidably exposed to view (see also guidelines for strategic employment);
- For quarries, consider use of conveyors to minimise need for haul roads and minimise plant movement (mobile plant often attracts the eye, even in distant views, with use of flashing hazard lights exaggerating visual effects and increased potential for night-time/winter disturbance from vehicle headlights).
• Consider lighting design to minimise glare/lighting overspill into adjacent areas;
• Consider location of temporary overburden or soils storage mounds in terms of both their own impact on views and surrounding landscape character (bearing in mind that ‘temporary’ features may be present for several years in quarrying terms) and the potential to use these features as screening for other, more intrusive quarrying operations;
• Consider design and location of perimeter security fencing if appropriate;
• Consider design of site entrance (a tidy, low-key site entrance may help to improve public perception of the development);
• Establish appropriate vegetative cover over temporary mounds to bind soils and reduce visual impact at the earliest opportunity (consider grass/legume/wildflower cover depending on local circumstances and objectives);
• Seek to retain natural screening features around the site perimeter including topographical enclosure, woodland and hedgerows as both immediate mitigation for the development and context for final restoration proposals;
• Consider use of advance planting, including off-site planting by agreement, to screen or soften sensitive views (eg planting established ahead of, or at the beginning of quarrying operations may reach sufficient size to successfully mitigate visual impact of later phases);
• Where immediate visual screening is required consider combined use of mounding, fencing and planting (including use of fast growing species eg willow/alder) providing this can be achieved in a manner compatible with surrounding landscape character;
• For landfill sites consider siting of litter nets to minimise visual impact where possible and collect accumulated litter at frequent intervals to maintain a tidy site appearance;
• Consider form, scale and colour of gas venting pipes where appropriate.

During the design of restoration proposals account should be taken of the following in relation to the surrounding countryside:
• Long-term compatibility with surrounding landscape character and setting, including topography, land over types (eg woodland, wetland, grassland, scrub, heath etc) and land use (eg arable, pasture);
• Potential for providing public access or enhancing the surrounding rights of way network (eg by providing links between existing routes, a new viewpoint or extension of the network).
• Hard Rock Quarries - The Minerals Research Organisation (MIRO) have produced comprehensive guidelines for the effective restoration of hard rock quarries with an emphasis on visual mitigation and ecological enhancement.

Where agricultural restoration is not a priority opportunities may also be considered for creating new semi-natural habitats (eg heath, wetland, woodland) to enhance bio-diversity within Doncaster. Similarly, the creation of new recreational resources (eg water sports, country parks) may be considered where a local demand is identified.

The potential for mineral extraction in particular to create valuable landscape features is demonstrated by existing resources in Doncaster. These existing resources could, potentially, act as a model when considering restoration objectives for new sites.

1.3 Infrastructure Developments (overhead powerlines, masts, roads, flood defence and underground utility developments)

These development types are subject to varying degrees of planning restrictions – varying from road developments where generally full applications are required to land drainage works undertaken by statutory utilities such as Doncaster’s forty or so ‘Internal Drainage Boards’. Drainage works are generally considered permitted development and as such are subject to very few restrictions from the Local Authority. Most of these developments are linear in form and careful route selection is the key to minimising their environmental impact. It is essential that a detailed analysis and assessment be made of all route options before an informed route choice can be made. Route selection is a complex process in which many variables must be taken into account of which landscape and visual issues are only one. A careful ‘balancing act’ must
be undertaken to determine the optimum route on environmental grounds and for this reason routeing proposals unless they are of a very minor nature should always be supported by an Environmental Study or full Environmental Impact Assessment to explain the basis for selection. The guidance below is therefore of a general nature only and the balancing act may require that rules are broken (eg it may be preferable that a transmission line crosses a scarp slope where it will be visually prominent rather than add an extra 2km to the route to avoid it).

Some general guidance on routing of linear developments is given below:

- Align routes of roads and pipelines to follow contours and minimise disruption to local landforms, keeping to lower elevations as far as possible. Follow natural breaks in slope and avoid straight alignments at angles to the natural grain of the land;
- Seek to minimise impact to landscapes which are particularly rare or valued in the context of Doncaster and have been designated;
- Seek to minimise impact on the settings of features of architectural, cultural, historic or aesthetic value;
- Take advantage of natural screening provided by dips in landform, valleys and areas of tree cover. Roads may make use of cuttings to assist in their screening but consideration should be given to the availability of views into and out of the cuttings;
- In addition to environmental impacts, economic and social effects of infrastructure need to be taken into account eg effects on agricultural holdings, community severance effects;
- Transmission line routes should be sited to minimise the use of unsightly angle towers, by keeping direction changes to a minimum;
- Transmission lines should be sited to avoid skyline situations eg escarpments or steep slopes as far as possible; where a line has to cross a ridge it is best crossed obliquely through a dip in the ridge; if there is no dip present the line should cross the ridge directly, preferable between belts of trees but avoiding the need to cut a swathe through woodlands;
- Routes and structures should be sited to take advantage of tree and hill backdrops and to take advantage of the screening provided by areas of tree cover, but the need to cut a swathe through areas of woodland should be avoided wherever possible;
- Where transmission lines are sited in parallel, tower design should be uniform. In open areas, high voltage lines should be kept as far as possible from independent smaller lines, converging routes distribution poles and other masts so as to avoid an unsightly wirescape;
- Underground cables and pipelines should be sited to minimise direct impacts to sites of nature conservation or archaeological interest and areas of tree cover.

Once the optimum route has been determined, consideration will need to be given to detailed design and mitigation to minimise impact on the local environment. Measures may include:

- The use of existing structures to support mobile phone aerials and the practice of amalgamating several transmitters onto one mast to minimise the need for visually intrusive structures;
- Pipelines and cables should be sited beneath roads, watercourses etc to avoid the need for pipe or cable bridges;
- Where transmission lines pass within close proximity to sites of landscape or historic/cultural/ archaeological sensitivity, or close to centres of population, or are sited in a sensitive skyline location, consideration should be given to burying of short sections;
- Roads and flood embankments should, where space permits, be graded into surrounding contours rather than creating an abrupt change in level;
- As it is not possible to screen the majority of linear developments effectively, mitigation should concentrate on landscape enhancement in the vicinity of the development that will assist in its integration. Linear screen planting will tend to draw attention to the presence of the development in the landscape. Mitigation should seek to reduce identified impacts from specific viewpoints;
- Give special attention to the design of local landscape associated with roads at the entrance to settlements, using planting and hardworks to emphasise the gateway effect;
- In improvement schemes and the building of new roads, consideration should be given to detailed design in relation to setting eg use of lighting, road signs and markings appropriate to village character, avoidance of overengineering eg overwidening, overstraightening, rigorous application of engineering
Part 3: General Landscape Design Principles for Development Types

design standards at expense of settlement or lane character, provision of kerbs where a simple tarmac edge may be more in keeping.

1.4 Tourism and Recreation

Tourism is an increasing industry in Doncaster, growing annually and exerting considerable visitor pressure on certain sites. Design issues will need to be considered as part of a strategic approach to both tourism and recreational use of the countryside. A range of design principles may be employed to reduce visual impact of tourism and recreation developments including the following:

• The use of local materials and appropriate design for buildings associated with tourism (as set out in guidelines for residential and agricultural development) will help to ensure that they are well integrated into the landscape and reflect a strong sense of local identity;

• The waterways provide important focal points for recreation and bridges provide points of access and opportunities for viewing waterways as from many areas they are screened by embankments. Bridges and crossing points should provide a focus for tourism enhancement programmes;

• Waterside development and enhancement can be used to develop the potential of poorer quality urban waterfronts;

• Provision of frequent viewing points and small car parks along roads will provide more opportunities for landscape appreciation. If associated with footpaths or circular walks, they will encourage access into the countryside;

• In naturally wooded landscapes, appropriate planting around caravan parks will help reduce their landscape impact while retaining outward views. Control of the scale and siting of caravan parks will help to limit their visual impact;

• The Countryside Stewardship Scheme encouragement of new permissive paths should focus on providing access to the full variety of landscape types within Doncaster, but particularly to those which provide interest in terms of their historic landscape, ecology, industrial archaeology, marine or riverside interest, or where they provide an opportunity to appreciate the landscape, eg from an elevated vantage point. This will aid an appreciation and understanding of the Doncaster landscape. They should also seek to improve access into areas where public rights of way are sparse.

• The right to roam movement may lead to pressures on areas of common or lowland heath, which should be managed through the development of footpaths and bridleways that will satisfy access demands;

• Opportunities for development of tourism and recreation features within newly restored landscapes should be fully exploited;

• Opportunities should be investigated for improved links between town and countryside and connections with places of interest such as woods, recreation sites, historic sites, areas of water, nature reserves and viewpoints. These should provide access for all where possible and should provide links with short circular walks and long distance routes;

• Initiatives to enhance the recreational and ecological potential of the major watercourses should be supported;

• Landscape issues should be given detailed consideration in relation to the further development of established tourism and recreation sites within Doncaster eg impact of additional parking provision should be carefully evaluated and consideration given to public transport options or offsite alternatives where appropriate;

• Careful consideration should be given to the further development of golf courses, in particular their design and landscape management which can make them at odds with surrounding landscape character;

• Careful consideration should be given to the requirements of active pursuits such as rally car racing, off road vehicles, scrambling bikes, paintballing, mountain biking and horse riding, each of which can have design and management implications;

• Provision should be made without damage to the physical resource and with respect for the character of the countryside.
### 1.5 Forestry and Woodlands

Forestry and woodland cover makes an important long-term contribution to landscape character. Adoption of some basic guidelines can help both existing and new woodlands become an integral and sympathetic landscape element, adding to the visual quality of the surrounding countryside. The following guidelines are only intended to provide an overview of the issues to be considered in woodland design, more thorough guidance is provided by the Forestry Commission (e.g. Lowland Landscape Design Guidelines, Forestry Commission, HMSO 1992 & Creating New Native Woodlands, Forestry Commission Bulletin 112, Rodwell & Patterson, HMSO 1994) and within the Doncaster Landscape Assessment:

- Woodland design should work with existing field patterns, natural boundaries and topography where possible, seeking to reinforce rather than weaken landscape character;
- Identify key views and key features that may be affected by the woodland, are these to be retained, blocked or enhanced?
- Consider scale and type of the proposed planting in relation to surrounding landscape character. For detailed guidance in relation to individual character zones refer to Landscape Assessment;
- Where coniferous planting is proposed consider provision of irregular broad-leaved edge, particular where adjacent to roads, rights of way, rides, watercourses or other landscape features (e.g. nature conservation/heritage site or area of high landscape value);
- Where broad-leaved woodland is proposed consider locally native species in preference to exotics;
- Consider provision of open ground and woody shrub species to increase ecological and visual value of woodland;
- For existing woodlands, felling and restocking may provide opportunity to increase structural diversity (e.g. through introduction of locally native species, creation of glades and open areas);
- For larger woodlands consider potential for public recreational access and links to the existing rights of way network;
- Consider felling sequence and effect on surrounding views (e.g. felling coupes should be irregular in shape, preferably following underlying topography and avoiding perpendicular crossing of skylines);
- In addition to effects on landscape character, consider any existing resources which may be unwittingly damaged by tree planting (e.g. nature conservation interests, archaeological interests, important views);

### 1.6 Biomass Planting

A recent notable increase in planning applications indicates an increasing demand for bioenergy (produced when a biomass such as trees, crops or waste is used to generate electricity or heat energy). It is a renewable energy source that has the potential to become a much more common component of the Doncaster landscape. A range of design principles may be employed to reduce the visual impact of biomass planting across a variety of landscape characters are outlined below. For detailed guidance refer to short rotation coppice guidelines developed by Forestry Commission: Simon Bell 2001.

**Enclosed landscape:**

- Plant biomass ‘crops’ at field scale
- Where practical, select biomass crops that have similar structural characteristics (height, colour, leaf form, lifespan) to locally characteristic vegetation.
- Regular field scale harvesting of crops in rotation will maintain both visual and bio-diversity within the landscape
- There may be opportunities to enhance existing gappy hedgerows and plant additional trees within existing hedgerows during the life of the biomass crop.

**Open landscape with flat topography:**

- Large scale planting may be appropriate, with rotational harvesting also in large units, forming an interlocking pattern
- Where practical, select biomass crops that have similar structural characteristics (height, colour, leaf form, lifespan) to locally characteristic vegetation.
- Reduce the scale of harvesting units towards edges to enhance visual interest
• Include and maintain strategically sited open areas along edges to provide a sense of depth to the large units
• Link with small scale woodlands and other features (such as parks and gardens) where present

Open with undulating and rolling topography;
• Identify the main landscape features in the topography (ridges and low points). Aim to link planting pattern to them.
• Where practical, select biomass crops that have similar structural characteristics (height, colour, leaf form, lifespan) to locally characteristic vegetation.
• Planting on lower lying areas will have lowest impact
• Aim for larger planting and harvesting units towards high points and decrease unit scale at lower elevations
• Plant bold interlocking shapes, using landform as a guide rather than field pattern
• Link into any established woodland wherever possible

Slopes;
• Identify existing features within the landscape and visually and physically link biomass planting areas to these (eg other woodland, watercourses – providing that there is no conflict with other Local or National policy such as implementation of Biodiversity Action Plans).
• Where practical, select biomass crops that have similar structural characteristics (height, colour, leaf form, lifespan) to locally characteristic vegetation.
• Aim for irregular patterns of planting, eg staggered rather than obvious geometric blocks.
• For detailed guidance refer to short rotation coppice guidelines developed by Forestry Commission: Simon Bell 2001
1.7 Built Development including Strategic Employment and Housing

New development across Doncaster will require careful co-ordination of siting, scale, form, colour and detail of the buildings and their surroundings. The integration of the development may necessitate creation of platforms and screening with fencing, earth bunding and trees and shrubs. Broad design principles to consider for new developments are as follows:

- Consider landscape setting and nature of proposed development. Does it lend itself to becoming a landmark feature or should it be obscured within the landscape?
- Consider how the proposed development’s built form relates to landscape character e.g. a broad low structure may be absorbed within a wide, open rolling landscape better if building massing rises from development edges. In a flat, open landscape broad low buildings of regular height may be more appropriate. On rising ground building mass could rise in correlation with landform;
- Consider lighting and how the development will appear at night; (refer to further guidance below)
- Consider how colour is to be used; (refer to further guidance below)
- Relate building massing to existing landscape or built features where available, e.g. adjacent to woodland, against landform ridge, against adjacent industrial buildings;
- Consider relationship with immediate setting and in views from key locations;
  i) Reduce massing or provide screening where sensitive views are identified;
  ii) Place ground-based ancillary/support facilities (e.g. storage tanks/ electricity substations) behind main facades or in screened locations;
  iii) Where setting sensitivity is less of an issue consider whether development could provide a positive ‘sculptural’ addition or visual reference point.
- On-site landscape mitigation proposals, seeking to reflect and reinforce distinctive local character through use of locally native species and planting forms (e.g. large-scale forestry, woodland block, copse, hedgerow, hedgerow trees, scrub) which are characteristic of the surrounding landscape;
- Off-site landscape proposals, which provide layered screening and reinforce landscape character through species choice and form of planting, as described above (e.g. along roads, hedgerows, watercourses, settlement edges, field boundaries, footpaths).

Further Guidance is Detailed later in Part 3.
2.0 Landscape Design and Planting for New Developments in Doncaster:

2.1 General Guidance and Recommendations

The following sections contain a series of guidance notes that recommend a number of ways in which new developments can be carefully designed to integrate with the existing landscape character area characteristics. Or, where a LCA has relatively indistinct characteristics, the new landscapes designed as part of developments can actually create a new high quality landscape character for the area.

Landscape and Visual Impact Assessments (LVIAs)

Requirements for well designed, high quality new landscapes should be integrated with the planning and design of new developments at the earliest possible stage in the planning process. Landscape and Visual Impact Assessments (LVIAs) are a recognised mechanism by which planning authorities can ensure that development proposals take into consideration the effect that they will have on the existing landscape and how these positive or adverse effects can be enhanced or mitigated for. Based on both Landscape Institute (LI) and Institute of Environmental Management (IEMA) guidance and recommended methodology, LVIAs contain information such as detailed surveys of existing vegetation and landscape features, details of access across the site and importantly, identification of key views to and from the site with comments and recommendations as to how these could be conserved, restored or strengthened by new development proposals.

High quality LVIAs enable both Planning Officers and Developers to understand the implications of new development on the existing landscape character of an area. A high quality assessment will provide a robust basis for the masterplanning process for the new development. An assessment should also provide recommendations that can inform future landscape design proposals – working to integrate new development into the existing surrounding landscape.

Creating Visually Stimulating, Attractive and Durable Landscapes

Future development in Doncaster will provide a wide range of opportunities for the creation of new visually stimulating, attractive and durable landscapes integrated into new developments to encourage investment and attract new residents. The following comments, observations and recommendations could be used by the Planning Authority as the basis for the creation of a series of development guidance documents – building on the information available which includes the draft supplementary planning guidance note Landscape Guidance for Development Sites in Doncaster currently available on the website www.Doncaster.gov.uk.

Learning From Best Practice Guidance

The Objective 1 programme has recognised the need for design guidance for commercial development and a Business Park Design Guide has been produced entitled ‘Better Places to Work in South Yorkshire’. In addition, a Residential Design Guide has been produced entitled ‘Better Places to Live in South Yorkshire’. This guide predominately concentrates on planning and design principles and the development of a process to be adopted when designing layouts for residential developments. This document is a valuable resource for Planning Officers and Developers and should be referred to during the development and assessment of development proposals.

2.2 Guiding Landscape Strategies for New Developments.

This Study has recommended a landscape strategy for each Landscape Character Area. Each new development should strive to achieve one or more of the recommended landscape strategies using available guidance and recommendations from Planning Officers.

Strengthen = Take note of existing landscape elements and their contribution to character and build on this to create a more distinctive character possibly with some new elements.

Create = Landscape has some potential to create new landscape character from scratch. Need to ensure that it sits well with adjacent areas with existing distinctive landscape character.

Conserve = Retain and protect existing landscape elements and character created by their unique combination. Avoid fragmentation.

Restore = Improve the condition of existing distinctive landscape elements and character whilst protecting them from loss or fragmentation.
2.3 Each development proposal should also include high quality landscape design proposals for the site that achieve the following:

**Protect existing valuable habitats** during and post development operations. Development proposals should include a landscape management plan that clearly identifies habitat constraints and methodologies for safeguarding them throughout development and beyond.

**Provide new habitats** for wildlife and increase local biodiversity. Development proposals should include appropriate designs including planting schedules and pay due regard to the vegetation characteristic of that Landscape Character Area and the habitat creation recommendations made within the Local Biodiversity Action Plan. Planting schedules should specify plant species that are locally appropriate wherever possible.

**Provide buffer planting** proposals where necessary that specify tree and shrub planting at a very early phase in the development to allow establishment of plants before works commence.


**Provides clear site interpretation** to enable users to easily navigate through and understand the landscape, in which they live and work. This can be achieved through a clearly legible but unobtrusive network of signs, information panels or leaflets, maps and websites.

**Encourage practical involvement** of businesses and residents in landscape creation and management through local interest groups and practical volunteer groups such as BTCV, the Wildlife Trusts and Groundwork Trusts.

**Durable materials are used** to create long lasting landscapes that are resistant to weather, disease, wear and vandalism. Construction materials and methods and planting types and methods should be appropriate to local conditions to maximise their life span in new landscapes.

**Minimal maintenance planting** and material styles should be used working within the bounds of realistic long term revenue budgets. For example, plants used should require minimal pruning and mowing regimes in order to minimise revenue requirements in the long term.

**Sustainable urban drainage systems (SUDS)** should be incorporated wherever possible using a range of techniques including permeable surfacing of hard surfaces, surface water swales, grey water recycling and appropriate vegetation types.

**A locally appropriate ‘Sense of Place’** and recognisable, attractive character should be created throughout individual new development sites. For example the use of locally sourced, recycled or quarried surfacing materials as opposed to those imported across great distances. Colours and textures of such material should be selected to blend with those found naturally occurring within the landscape. Also the use of local South Yorkshire hedge planting mixes, laying patterns and management techniques where hedgerow improvements are required.
Site specific artwork should be designed into new and existing landscapes wherever appropriate. This should vary between low-key ‘environmental’ art making use of the landform and natural materials – and higher specification feature artwork to mark significant areas on site and businesses. The process of designing and creating artwork can be an effective way of engaging local communities in taking ownership of their environment. Artwork can take many forms and can be particularly effective incorporated into necessary landscape features such as seating, signage and planting. A wealth of talented, creative local artists/crafts persons are practising in this region. They should be invited to take lead roles in community workshops for the creation of artwork that could be integrated into the development of new landscapes.

Sustainable landscape specifications and method statements should be provided for all works to be carried out on site. At a very minimum, the following key standards and advice should be adhered to:

- BS 4428:1989 Code of Practice for general landscape operations
- PAS 100:2005 Specifications for composted materials
- Compost Specifications for the Landscape Industry 2004
- BS 5837:2005 Trees in Relation to Construction

2.4 High Quality Landscape Design and Specifications

Landscape designs for sites across Doncaster should strive to be examples of best practice in design and specification. A range of excellent guidelines are available that provide best practice advice for creating new landscapes and include guidance for selection of appropriate materials, techniques and design styles.

Improving Urban Parks, Play Areas and Green Spaces DTLR 2002
Commission for Architecture and the Built Environment (CABE)
The Dynamic Landscape (Dunnett and Hitchmough) Spons Press 2001
The Planting Design Handbook (Robinson) Gower

Potentially Damaging Operations (PDOs) should be minimised during works on site. Method statements should be requested as part of the planning process to actively minimise environmental damage caused by construction and landscape works such as hard works, topsoiling and planting. It is recommended that as a minimum, method statements should be produced for the following operations before works commence and form an intrinsic part of detailed specification documents;

Timing of clearance and construction works. Minimise habitat disturbance during breeding seasons (generally April to June although specialist ecological advice should be sought) particularly adjacent and within valuable wildlife corridors and important hedgerows.
Part 3: General Landscape Design Principles for Development Types

Storage of materials. Inert materials should be stored outside the tree root protection area (BS5837:2005) to avoid burying of roots resulting in physical damage and death. Store inert materials at a minimum of 5m from the edge of wildlife habitats and migration routes to prevent damage to habitats and pollution of soils, pollution of water bodies and watercourses.

Using recycled materials. Specify materials of low environmental impact during their lifecycle. Where practical this will include the avoidance of the use of; Hardwoods, chemical preservatives, Polyethylene and Polyvinyl Chlorides PVC. Recycle / manufacture soil on site wherever possible. Import new soil material and soil ameliorants only from known sources to avoid using chemically and physically contaminated soil. Careful selection using independent inspections and exploratory tests should be made to all materials to ensure suitability for purpose. Use soil and plant material from certified sources. Developments can avoid importing and using physically contaminated material. Refer to BS3882:1994 and National Plant Specification and advisory notes by the Joint Council for Landscape Industries /Committee on plant supply and establishment.

Specifying peat-free recycled planting mediums. Avoid importing and using physically contaminated composts and mulches. Refer to PAS 100:2005 Specifications for composted materials.

2.5 Creating New Landscapes

New landscapes should achieve a careful balance between using planting styles that reflect the natural and historic character of the landscape and those that introduce more contemporary elements in keeping with the surrounding new developments.

Designs for attractive new landscapes should include the following:

• Clearly identified areas where planting should reflect the surrounding natural landscape, areas where entirely new landscapes are being created and areas that bridge the two types of area.
• Buffer zones of new planting - designed to reflect and/or complement the existing surrounding landscape character and protect these areas from visual and physical encroachment by development. The design of buffer planting should predominantly use vegetation types based on those found in adjacent wildlife corridors and plants that contribute positively to defining local landscape character.
• Planting areas of new native and ornamental planting where appropriate to create an attractive landscape character in and around developments. Whilst designs should take into account the surrounding landscape, they should also be used as a way of introducing appropriate textures, colours and shapes into the area.
• Forms of planting that clearly define public and private spaces and minimise opportunities for crime.

2.6 New Landscape Planting Types

Planting characteristics for new landscapes should include:

Trees: Large and medium sized trees with clear stems and with ‘neat’ canopy shapes that offer seasonal interest (a variety of bark textures, leaf shape, blossom and fruits).

Shrubs and small trees: Native and ornamental species that have ‘neat’ forms or are easy to maintain as such by simple annual pruning, shrubs that can be coppiced (cut hard back to around a third of their height every 2/3 years) are easy to maintain in neat forms and as such will provide clear sight lines throughout the landscape.

Groundcover: 1-2m depth verge of low growing shrubs, herbaceous perennials and species rich grass (to separate planting from footpaths).

Native bulb planting planted in informal clusters and allowed to colonise naturally.

Shelter belts and noise barriers: Use appropriate structure planting to shelter exposed areas from strong winds and from sound created from new developments. Arboricultural Practice Note 6 - Trees & Shrubs for Noise Control provides useful guidance on techniques and species. Additional information providing guidance for the planting of trees in the proximity of development can be found in the National House Building Council Standards. Information regarding appropriate distances between new planting and buildings is detailed in NHBC Chapter 4.2 with figures and calculations for best practice.

Minimal Maintenance requirements: Carefully design areas of maintenance intensive landscapes – restricting these areas to defined spaces to delineate entrance zones within key public areas in the
residential zones and the economic development areas. Sustainable management of new structure planting could offer a wealth of opportunities for generating income. Organisations such as the Wildlife Trusts and the Working Woodlands Trust may be interested in taking a role in developing revenue generating enterprises. Working with local environmental organisations revenue for management of the site could be generated through the sale of coppice materials, harvested materials such as meadow grass and wildflower seed mixes, wetland plants removed during pond management programmes and sale of chipped and composted timber from annual woodland management.

**Biodiverse grass seed mixes**: Within public open spaces, incorporate islands and margins of more species rich grassland seed mixes by using mixes that include a larger number of grass types as well as wildflowers. This will add visual and wildlife interest by providing colourful flowers, interesting plant shapes and texture. They also help to reduce maintenance costs by reducing the number of mowing operations required (reduced from 8 annual cuts to a single cut after the plants have seeded in the autumn). These areas will also provide habitats for wildlife, especially small mammals, birds and pollinating insects.

**Herbaceous perennial planting**: In combination with trees, shrubs and grass to create under storeys that are colourful, wildlife rich focal points. When using non-native plant species, maximise success rates by prioritising the use of plant species that thrive in local climatic, soil, air quality and drainage conditions to minimise replacements required after establishment. Provide wildlife habitats for local fauna — including food, nesting material and roosting opportunities.

**Ornamental planting** can be used to great effect to create attractive entrance gateways at the boundaries of different land use zones including entrances to new business parks, roundabouts, new parks and gardens and entrances to community buildings etc.

**Creating safe spaces**: Provide safe, well perceived public open space and recreation space within the residential developments. Reference should be made to the following good practice guidelines for creating a safe landscape;

- Designing out crime from new landscapes: ‘Secured by Design’ (UK Police) www.securedbydesign.com
- Designing safe landscapes: The Royal Society for the Prevention of Accidents (ROSPA) www.rospa.com

**Increased wildlife habitat provision** in new development areas wherever possible. This can be achieved through new planting, with an emphasis on native, local provenance palettes. Providing well maintained flowering planters throughout hard landscaped areas where appropriate (as hanging baskets and free-standing planting beds). Installing bird nesting boxes in new tree planting throughout new developments.

**Encourage an understanding of the local landscape** by landowners and site users. Through the planning and design process, owners and users can gain an understanding of the local landscape and habitats and take an active involvement in landscape creation and management. This should build on the considerable existing momentum for wildlife conservation across South Yorkshire by strengthening established links with local environmental organisations including BTCV, Groundwork and The Wildlife Trusts. Local environmental groups should be invited to run guided events and illustrated talks and fun days based on habitats and wildlife in local open spaces. This will help to raise awareness within the local business and residential communities of ecology and sustainable landscape management as an active way of minimising climate change – reducing CO2 production and minimising energy wastage.

**Providing recreation opportunities within new developments**. Landscape designs for residential and commercial developments should try to incorporate ‘pocket parks’ wherever possible. These are small (approximately 500m2) areas of green space that are attractively designed and provide quiet resting and simple play areas throughout new developments. These spaces should be carefully designed to offer users safe, attractive areas where they can stop and chat with friends, spend their lunch hour, enjoy a moment of peace and quiet on the way home from work or taking children to school. Typical characteristics of these spaces should include;

- A small site (under 500m2) between houses or businesses with a decorative boundary fence, attractive tree and shrub planting with mown grass verges.
- Play facilities with a relatively high level of seating, litter and dog waste bins.
Part 3: General Landscape Design Principles for Development Types

- An agreed management plan and regular maintenance regime.
- Interpretative material often in the form of artwork — which can be incorporated into seats and fencing or as more traditional signage/notice boards.
- A local group that encourages and co-ordinates local people to take an active role in the park management and involve volunteers in events such as litter-picks and bulb planting sessions.

2.7 Planting Styles for New Developments

There are a number of regional examples of good practice that illustrate how a variety of planting styles can be used to different effect throughout the landscape. The following business parks and outdoor recreation centres have been identified as examples of good practice and used to illustrate how attractive, cost effective new landscapes can be successfully designed using environmentally friendly techniques.

**Commercial development;**
- Lakeside, Doncaster
- First Point, Doncaster
- West Moor Park, Doncaster
- Sherwood Business Park, Nottinghamshire
- Rail Freight Business Park, Northamptonshire

**Housing development;**
- Denaby, Doncaster
- Manor Estate, Sheffield
- Norfolk Park Neighbourhood, Sheffield

These landscapes illustrate a range of different styles and approaches to planting in both new and existing landscapes. The approaches aim to create long lasting and low maintenance, attractive greenspaces that compliment new developments and are:
- Generally low maintenance with some maintenance intense areas at key gateways

- Accessible and easy to use for both pedestrians, people with disabilities and vehicles.
- Attractive to wildlife and improve local biodiversity
- Attractive and enjoyable to all sections of the community

2.8 Early Planting for Screening New Developments

Planting of hedges and tree belts as early structure planting can be used to great effect. Development plots that are not programmed for construction for several months can be cheaply and quickly planted with native tree/shrub species in order to establish a protective hedge. These hedges perform two roles — brightening the site and making it more attractive to potential developers as well as then forming an ‘instant’ buffer from adjacent sites when development gets underway. This can be seen to be particularly effective the longer plots are left undeveloped. At the sites aforementioned several plots have awaited development for around 5 years resulting in well established boundary planting. In most instances this has been retained in part to form the backbone of the new landscape around the buildings.

*Well maintained close cut grass verges make woodland planting belts and hedgerows look neater and feel safer for users.*

*Large shrubs and small trees planted as hedgerows can act as screens for undeveloped plots and can help shelter new developments from weather, noise and unattractive views of roads and car parks.*

Doncaster Landscape Character & Capacity Study
2.9 Providing Year-Round Planting Landscape Interest

Landscapes that look attractive throughout the year should be created using a mixture of deciduous and evergreen species in planting mixes. This will add changing plant shapes and colours to the landscape throughout the year;

Using deciduous species creates a dynamic landscape that marks the changing nature of seasons in several ways;

- Bursting new buds in early spring bring colour to views
- Bunches of coloured spring and summer blossoms brighten dull days
- Deepening leafy greens make a landscape feel clean and refreshed
- Ripening berries, fruit and reddening leaves throughout the autumn
- Distinctive bark colours and textures throughout the winter
- Distinctive leafless tree silhouettes throughout the winter

Some popular examples of attractive deciduous tree planting;

**Birch** trees (*Betula* varieties) have bright silver/white stems which can look striking when set against a dark background. They also have very bright spring leaf growth which coupled with glowing autumn leaf colours can make Birch trees very attractive amongst structure planting. Their presence as nurse trees toward the front of planting blocks makes them an eye catching addition to new planting.

**Beech trees** (*Fagus* sp) have wonderful autumn colour which with young trees holding their leaves throughout the winter can make a wonderfully colourful hedge.

**Rowan trees** (*Sorbus* sp) have brilliant autumn displays of red leaves and berry clusters ranging from bright red to pink and white. A great resource for wildlife as well as being an attractive feature during the autumn.

**Maples** (*Acer platanoides* varieties) have brilliant autumnal leaf colourings and attractive bark.
Some popular examples of attractive deciduous shrubs:

* **Cornus species** - Dogwoods stem colours range from deep wine red to bright lime greens and pinks. Blocks of these woody coppice shrubs can form very attractive hedges and edges to structure planting beds.

* **Buddlias** (Butterfly bush) are beautiful additions to new landscapes (although annual coppicing is often required) with striking colourful bunches of flowers and very attractive smells. They are very wildlife friendly, attracting birds, butterflies and bees. Also;
  - **Amelanchier lamarkii** – bright spring blossoms
  - **Berberis darwinii** – long lasting autumn colour and fiery red berries
  - **Ceanothus** – bright blue mounds of summer flowers
  - **Chaenomeles speciosa** – brilliant autumn colour and fruits
  - **Cotinus coggyria** – rich purple and red leaves until winter
  - **Contoneaster** – rich emerald evergreen leaves with lasting bright berries

(For many others refer to NPS Section 2)

Some popular examples of attractive groundcover;

* **Groundcover** – low growing shrubs, herbaceous perennials that may be scented and have colourful leaves, flowers and berries;
  - **Lamium maculatum**
  - **Geranium macrorrhizum**
  - **Tiarella cordifolia** – varying leaf colour
  - **Alchemilla mollis**
  - **Geranium endressii**

Suggestions for evergreen species

Evergreen species should be included in planting mixes to ensure year round interest in the landscape. They can effectively screen views and provide attractive backdrops that highlight signage and landscape features.

A naturalistic mix of planting can be achieved with a mix of deciduous and evergreen trees and shrubs

Consider using the following evergreen species in planting mixes;

**Trees**
- Larix kaempferi, L.decidua and L.x eurolepis
- Ilex aquifolium
- Quercus ilex
- Eucalyptus
- Taxus baccata

**Shrubs**
- Mahonia japonica
- Pieris Formosa
- Ulex europaeus
- Ribes speciosum
- Buddleia globosa

**Groundcover**
- dense canopy, spreading species;
  - Cistus corbariensis
  - Viburnum davidii
  - Hebe pinguiifolia
  - Hedera spp
  - Cotoneaster dammeri

A mix of deciduous and evergreen groundcover planting can be used to create attractive, neat, low maintenance gateway focal points

An evergreen hedgerow provides year-round shelter from the elements

A mix of deciduous and evergreen groundcover planting can be used to create attractive, neat, low maintenance gateway focal points

Doncaster Landscape Character & Capacity Study
2.10 Signage and Landscape Interpretation
Signage should be kept to a minimum and be aimed at visitors to the area avoiding signage 'clutter';
At junctions signage should clearly indicate the direction to be taken to a particular destination
At entrances to different development zones ie residential or commercial
At entrances to different developments ie businesses, shops, schools

2.11 Establishing suitable planting mixes for long term survival
It is important that planting establishment rates are maximised for this scheme as the planting will be a significant asset for the development site. On a scheme of this scale ‘usual’ commercial planting scheme failure rates of 5% to 10% are considered normal but failure rates can be reduced by careful species selection, planning and investment in good quality stock from the outset of a scheme. This approach can significantly reduce long term management costs.

The correct selection of plants to suit the site conditions is important to the success of new planting in the landscape. These proposals recommend a number of planting mixes with key characteristics. Reference should also be made to are made to the following sections of the National Plant Specification handbook (HTA 1997) Section 2: Species lists and specifications for British native and non-native deciduous and evergreen trees and shrubs, herbaceous plants and wildflowers. Appendix 1 of the NPS handbook includes important advice regarding handling and establishing landscape plants. Part III has recommendations for plant handling from delivery to site to successful establishment.

Using native plant species
It is widely recognised that native trees and shrubs support a wider range of plants and animals than introduced plant species. They help to maintain local character and conservation value and usually thrive in relatively poor soil conditions associated with brownfield sites - often more so than non-native species.

The use of locally appropriate, native species as highlighted in existing planning guidance documents and the Local Biodiversity Action Plan should be prioritised in specifications for planting across Doncaster.

The genetic makeup of local provenance native trees and shrubs ensures that they are well adapted to local conditions so they are more likely to establish well and thrive in the long term. They are better suited to Doncaster’s local soil and weather conditions as well as being more resistant to local competitive flora, insects and diseases.

Planting does not necessarily have to be exclusively native species. Non-native planting can be sensitively used to provide a wide range of planting forms, colours, and textures in the new landscape and can be used to great effect to create new character zones and create attractive identities for new development areas.
2.12 Structure Planting for new development landscapes

Woodland Buffer Planting

The purpose of woodland buffer planting is to provide a protective belt between existing valuable woodland habitats and new development. Carefully selected species mixes are important to ensure that the new habitats survive in the long term and become a long term feature rather than a temporary solution.

Buffer planting mixes should include a range of tree, shrubs and ground cover species, forms and planting densities to create a naturalistic planting structure that allows the species to thrive and encourages wildlife. The mixes should be predominately native species and designed to reflect natural species combinations and planting densities. Mixes should also vary according to their adjacent habitats. Mixes of predominantly fast growing, short lived tree species planted in regimented patterns are not recommended. Although these provide a ‘quick fix’ solution to protect adjacent habitats and screen development, they will result in more costly management in the medium term when they require felling and replacing.

However, fast growing short-lived tree species can be carefully mixed into buffer planting mixes to provide a matrix of fast establishing plants that will naturally die off and be superseded by slower, longer lived species. This type of interplanting is referred to as ‘nurse planting’.

Nurse planting

Nurse planting should be used where screening and shelter is a priority and height and bulk of planting is needed quickly. Nurse planting involves including fast growing tree species within more traditional slower growing mixes. The fast growing species rapidly forms a screen of trees and shrubs. Nurse tree planting will require thinning after around 10 years in order to prevent them out-competing slower growing species that will eventually form the main bulk of the planting block. Planting patterns and spacing of nurse species should be planned carefully as large blocks of nurse trees in clusters towards the front of planting belts. This allows future felling to be carried out causing minimal damage to surrounding planting.

The photographs below illustrate the different ways in which woodland planting has been used to effectively screen developments within Sherwood Business Park.

- Native and non-native woodland planting mixes have been used in the foreground to screen this large car park. Larger scale buffer planting is visible in the background create a screen to the development from the nearby main roads and also to protect existing semi mature woodland beyond.

- Quick growing native salix species were planted along the boundary of this plot around 2 years before development started. They quickly formed a tall hedge that acts as a screen during works and will remain as a boundary hedge post completion.

- A colourful mix of predominantly native deciduous and evergreen small trees and shrubs have been used to provide an attractive screen along the frontage of this large development.

- An effective example of woodland edge planting consisting of small deciduous native trees and a mixture of native and non-native deciduous and evergreen shrubs.
Suggestions for structure planting species mixes and positions

Wherever possible a belt of predominantly native buffer planting should be created 30metres in width along the length of the development boundary and existing habitat. This is generally recognised as the minimum depth required to establish an new habitat, particularly woodland, that supports a good range of plants and wildlife in the long term.

Suitable planting mixes should include large and medium trees, shrubs and groundcover of locally appropriate species. The mix should be relatively quick growing and provide an attractive wildlife habitat.

Planting mixes should specify an even mix of species, planted in small groups. Pit plant into topsoil with fertiliser, weed suppressing mulch and watering to aid establishment. Species included in small proportions are best planted in occasional small groups. Protect planting with temporary timber post and rabbit-proof wire fencing or biodegradable tree shelters.

Woodland management plans should be developed for woodland and buffer zone planting to ensure that the appropriate felling of nurse trees takes place to allow long term survival of taller tree species.

Detailed advice and recommendations for the design and management of woodland areas is available from www.forestry.gov.uk;

Management Handbooks:

Creating and Managing Woodlands Around Towns. (Simon Hodge) and Urban Forestry Practice (B G Hibberd)

Fundamental Woodland Management – Management of woodland to ensure safety and continuity. (Rodney Helliwell, Small Woods Association 2006)

Good Practice Guides (Forestry Commission1994):

The management of semi-natural woodlands:8. wet woodlands.

The management of semi-natural woodlands:3. lowland mixed broadleaved woods.

Practice Notes:

008 Using local stock for planting native trees and shrubs (R Herbert)

Creating New Native Woodlands (Rodwell, John and Patterson, Gordon, 1994).
2.13 Hedgerow planting

Hedgerows are likely to be required as edge treatments adjacent to existing development and around new developments and open spaces. For example they may be planted as a new feature and also as an extension of existing hedgerow planted and should be planted slightly set back of footpath or kerb edge.

Planting mixes should include native species hedgerow shrubs and small trees which will provide a locally appropriate mix that is relatively quick growing, low maintenance and provides an attractive wildlife habitat.

Planting method: Plant a minimum of two or three staggered rows for a visually impermeable hedge. Pit plant into topsoil with fertiliser, weed suppressing mulch and watering to aid establishment.

Management plans should include for cutting back plants to within one third of their planted height (coppice) after their initial establishment year. This will encourage good bushy growth from the base of the plant and produce denser, healthier hedging in the long term.

Notification of planting works that may effect protected and designated Landscapes

Designated landscapes include nationally recognised Important Hedgerows, Nature Reserves and Sites of Special Scientific Interest, Conservation Areas, Tree Protection Orders and Registered Parks and Gardens, Historic Landscapes etc.

It is important that new development proposals comply with Doncaster’s Interim Supplementary Planning Guidance www.doncaster.gov.uk, government planning policy and relevant legislation such as Tree Protection orders, Wildlife and Countryside Act and Hedgerow Regulations. This list is not exhaustive and guidance should be obtained from Planning Officers as to detailed requirements for all development applications.

For example - extensions or ‘repairs’ to existing hedgerows may require a more sensitive mix of planting and in most cases Local Planning Officers must be notified of the intention to undertake any works to existing hedges. Usually a management plan and method statement for works to a hedgerow may be required. This may include unique planting mix, method and programme for each hedge developed with expert ecological and landscape design advice to ensure that existing hedge integrity is not disrupted. Design and management advice is also available from Doncaster’s Biodiversity Action Officers and Statutory Bodies such as Natural England and English Heritage.

Ornamental tree planting along major access routes through new developments

Ornamental tree planting including non-native structure planting can be selectively used to great effect in new developments. This may include avenue tree planting set back a minimum of 6m from the edge of spine roads and their main tributaries. The space for this planting is often limited and sufficient for tree planting only however, if space permits then an additional belt of medium to high shrub planting between the development and the tree avenue is recommended to increase the buffer effect, allow ease of tree maintenance and provide new wildlife habitats.

Planting mixes should include trees suitable for avenue planting with key characteristics (as recommended below). Ground cover beneath trees should be either biodiverse grass mixes or low growing shrub species. Shrub planting belt behind trees should be to maximum height of 2m, include native and non-native species and contain a variety of colours, textures, deciduous and evergreen species.
2.14 Tree Planting

Species for individual standard tree planting. It is important to select species that are consistent in form and foliage to produce a neat planting arrangement. A single species or combination of 2-3 species known to be reliable in the location are usually used. For the new landscapes, it is important that the tree species selected are known to be tolerant of the often relatively poor soil conditions of brownfield sites and will not require frequent surgery to maintain it in a safe condition. Many Sorbus, Prunus and Alnus cultivars are popular for tree planting in similar situations.

Trees should be pit planted, staked or secured by underground guying depending on the size and location of the trees. An underground irrigation coil should usually be included within the tree pit to promote drainage particularly in urban situations such as car parks, paved areas etc.

Detailed advice for appropriate species and spacing is provided in ‘The Planting Design Handbook’ Robinson (Gower). Tree planting can be under planted with a variety of different ground covers to great effect. The photos below illustrate tree planting where grass, hedging and naturalistic shrub plantings have been used to great effect as an under storey.

Location: Rail freight terminal business park, Crick, Northamptonshire
2.15 Ornamental shrub planting to enhance development gateways and spine roads

The term ornamental planting is used here to describe planting of predominantly non-native species planted in formal layouts across relatively small planting areas. Focal points can include prominent roundabouts and entrances to development areas. The aim of using ornamental planting is to create attractive eye-catching focal points in particular areas of the landscape. It also provides a sense of order and as long as it is well maintained, it can be a highly effective way of relaying an image of quality and care. It can be expensive to maintain well and this document recommends that its use should also be kept to a minimum. This will help to minimise long term landscape maintenance costs. Ornamental planting should be generally restricted to areas of entirely new landscape associated with;

- Entrances to new developments (to create a neat, attractive welcoming entrance)
- Pocket parks (to create safe, attractive, pleasant sitting/playing areas)
- New roundabouts (to create an attractive low lying, welcoming gateway to new development zones along transport routes)
- New gardens in residential areas

Ecological ornamental planting can be used to increase the diversity of new landscapes

This approach follows the principles of ecological planting (ie working with nature rather than against) whilst using both native and non-native ornamental species, matching species to habitat to maximise planting longevity. Traditionally ornamental planting is significantly more costly to maintain as fertiliser and pesticide application, watering, pruning levels were often very high. Taking an ecological approach can help to significantly reduce these costs — as the chosen plants thrive in the soil for which they have been selected and grow well together.

2.16 Creative Use of Seed Mixes Throughout New Landscapes

Herbaceous perennial planting for focal point planting beds and meadows

A great deal of recent research is available which identifies successful species mixes of non-native herbaceous ornamentals. Current horticultural research across the country and at Sheffield University has developed a series of successful planting mixes that provide splashes of long lived colour to new landscapes requiring relatively low annual maintenance. www.pictorialmeadows.co.uk. Details of appropriate species mixes and planting advice are available from a number of sources including landlife.org.uk and pictorialmeadows.co.uk. These mixes can be used to create visually stimulating landscapes but should be specified with care and sensitivity to prevent the use of invasive species that may out-compete native species and transform the local character of the landscape. Seed mixes are generally most cost effective but larger plants can be used. Both provide a colourful, wildlife-friendly replacement for mown grass, or more formally in planting beds, or to provide colour between planted shrubs, trees and perennials. The seed mixtures can contain native wild flowers and non-native garden plants and they are often the product of more than one country. They are therefore often not suitable for conservation mixes for use in rural areas outside garden boundaries.

Native and non-native herbaceous ornamental species have been used to great effect throughout the UK along roadside verges, in public open spaces, pocket parks, school grounds, new gardens and roundabouts.
Perennial planting in beds and meadows provides beautiful naturalistic displays that carry on from year to year, without the need for repeated cultivation. Native species are mixed with non-native cultivated species to heighten visual effects. Mixes usually contain a small amount of appropriate annuals for first-year effect. To aid establishment of the flowering plants mixes do not contain grasses (although native grasses will come in of their own accord once the meadows are established). Two mixtures can be developed both flowering continuously from spring through to autumn.

Annual seed mixes in the new landscape. By using annuals vibrant, colourful meadows can be produced that will fit the smallest of spaces, but which will also look very dramatic used on a large scale in public open spaces. Annual meadows have the advantage that they will flower within months of sowing, will carry on flowering into autumn, and will still look attractive in the winter. The image of a beautiful wildflower meadow is romantic ideal, but in reality they can be difficult to create successfully and best practice guidelines should be followed:

Best Practice applications for meadow mixtures are varied. They can be used in formal beds on their own, or amongst perennials or shrubs, either in established beds, or as a way of filling space in newly planted beds. However they work particularly well as meadow areas, producing dramatic displays on a large scale often with paths running through. They also work well amongst avenues of trees or as attractive insect attractants amongst shrub planting in gardens. Further detail of best practice for site preparation, seed mix details (long season mixes through to particularly late flowering mixes and emergent species), sowing periods, the range of visual effects that can be achieved and maintenance information – is available from a number of specialist sources including Pictorial Meadows, Landlife and British Seed House websites.

Grass mixes in the new landscapes. Native species rich, biodiverse lawn grass mixes rather than the traditionally used 'amenity' grass monoculture mixes should be specified. The total area of new turf created in new residential developments can be significant and using a more biodiverse grass mix (whilst still selecting mixes that retain the practical properties of being wear resistant and low maintenance) can make a significant positive contribution to improving local biodiversity.

2.17 Landscape Implementation Good Practice

Good stock plants and careful plant handling. To minimise plant failure refer to the Recommended Standard Form of Tender For the Supply and Delivery of Plants in accordance with British Standards BS5236 Specification of advanced nursery stock and BS3936 Parts 1-5,10 tree, shrub and groundcover specification.

Good ground preparation (soil specification). Good ground preparation will result in high levels of plant establishment and long term sustainability. The soils across Doncaster vary considerably with soils around existing thriving habitats likely to be deep, nutrient rich and well drained and soils where land reclamation has taken place (brownfield sites) may be thin, nutrient poor, stony and compacted with poor drainage. Developers should ensure that the available soil type is suitable for the success of the planting required and if not then appropriate ground preparation must be undertaken. Soil ameliorants (conditioners) and drainage improvements may be required.

Reference should be made to BS3882:1994 Specification for Topsoil. This standard sets out the requirements for topsoil; it describes three grades of topsoil and recommends their appropriate use and handling. Various methods of sampling and testing topsoil are included. Topsoil must be free from pernicious weeds and roots, clay lumps, non-soil material, brick and other building materials, foreign matter and chemical contamination.

Soil Amelioration – specifying appropriate peat-free compost. Large areas of the Doncaster landscape have been reclaimed from former industrial use where the topsoils are likely to have been substantially disturbed from their natural condition and they and their subsoil may have very poor structure, often heavily compacted. As a result, plant growth is likely to be severely restricted unless remedial action is undertaken. Soil condition can be improved with the correct addition of compost resulting in benefits in terms of plant establishment, growth and cost savings.

A number of ‘composts’ are available for use in planting schemes in the UK, offering a range of effectiveness. It is important for the success of planting schemes that appropriate composts are used to ameliorate the soil. ‘Composts’ vary in composition and environmental impact. ‘True’ composts are typically produced from recycled, biodegradable (organic) materials and are increasingly available. Virgin ‘compost’ products such
as peat are produced from non-renewable, unsustainable sources. The use of such products can be seen to be causing significant negative environmental impact through causing irreparable habitat damage. Organisations such as the British Association of Landscape Industries (BALI) Landscape Institute, Royal Horticultural Society and the Wildlife Trusts recognise the importance of reducing the use peat ‘compost’ in the UK over the next 10 years in order to prevent wholesale destruction to valuable, natural habitats.

For landscape management schemes for business parks and housing regeneration schemes, significant environmental benefits can be made indirectly through sensitive specification of true compost and contribute to the new development being an example of Best Practice in more ways than one. “Compost Specifications for the Landscape Industry” (The Landscape Institute 2004) has recently been developed to offer a wealth of advice and information regarding specification of compost in landscape schemes. These specifications should be used to effectively specify soil amelioration for planting schemes across Doncaster to maximise landscape sustainability.

2.18 Sustainable Landscape Management

Long term landscape management. Existing habitats and newly created landscapes around new developments will benefit greatly from appropriate management. Although proposals should recommend designs that minimise maintenance — it will still be essential to carry out a certain level of grass cutting, shrub pruning, litter picking, tree management, surfacing works and other operations in order to maintain the high quality image of the landscape and continue to attract investors and ensure the landscape is a pleasant place to live and work. To allow quality to be maintained across the site the cost of these operations should be considered carefully during the design process and allowed for in the costing process.

It is recommended that a detailed landscape management plan is created for each new development that includes landscape design that is appropriate in terms of operations, costs and timings. The table below gives examples of the types of management regimes that will be required to maintain the landscape in the long term.

<table>
<thead>
<tr>
<th>Vegetation type</th>
<th>Example of management regime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing natural habitats for example: Hedgerows, Woodland, Stream corridors, Ponds, Grasslands, Others</td>
<td>Detailed management plans should be developed by specialist consultants / environmental bodies to ensure use of appropriate techniques timings operations</td>
</tr>
<tr>
<td>Formal grass verges and lawns</td>
<td>Mow to maintain 50mm sward height. Removal and composting of cuttings</td>
</tr>
<tr>
<td>Informal grass boundaries and shrub border edges</td>
<td>Mow to maintain 100mm sward height. Removal and composting of cuttings</td>
</tr>
<tr>
<td>Wildflower meadows - informal</td>
<td>Flail annually after seeding with collection of cut material for hay supply to local market</td>
</tr>
<tr>
<td>Formal ornamental shrub planting borders</td>
<td>Prune according to species. Regular watering during establishment years and during dry weather periods. Weed suppression by annual mulching. Removal of litter.</td>
</tr>
<tr>
<td>Naturalistic shrub planting areas</td>
<td>Removal of dead wood according to species. Removal of litter.</td>
</tr>
<tr>
<td>Formal ornamental hedge planting</td>
<td>Cut during winter months to shape hedgerow. Removal of litter. Regular watering during establishment years and during dry weather periods.</td>
</tr>
<tr>
<td>Small native tree planting</td>
<td>Regular check to identify dead/diseased wood and removal. Checking tree ties to ensure suitable tightness. Regular watering during establishment years and during dry weather periods.</td>
</tr>
</tbody>
</table>
Part 3: General Landscape Design Principles for Development Types

| Large trees | Annual check of stakes/guying and ties, to identify dead/diseased wood and removal or alternative recommendation by arboriculturalist. Regular watering during establishment years and during dry weather periods. |
| Avenue planting | Annual check of ties and guying tensions, to identify dead/diseased wood and removal or alternative recommendation by arboriculturalist. Regular watering during establishment years and during dry weather periods. |
| Wetland planting | Annual check for invasive plant material. Treatment is required in line with Environment Agency guidance. Removal of litter. |

Using mowing regimes to reduce maintenance costs and improve biodiversity

The use of different mowing regimes can be a useful method of effectively (in both visual and cost terms) marking land ownership boundaries. Mowing regimes can also be used to unify the visual appearance of adjacent landscapes and can be an effective way of creating sense of uniform management across a large site.

Traditionally grassed areas in business parks, public open space and gardens are mown regularly to maintain a short, even sward height and reduce weed growth. This type of regime is revenue intensive and often draws scarce revenue funding away from other landscape management issues that would benefit from a higher level of maintenance.

Significant revenue savings can be made by a combination of sowing more diverse grass seed mixes and mowing these areas less frequently (to allow wildflower species to grow) accompanied by limiting intense mowing regimes to small areas. Attractive examples can be seen locally of how attitudes are changing to the level of mowing that is considered acceptable in formal landscapes. The photographs below show the effects that selective mowing regimes can achieve. Naturalistic ‘wild’ (attractive, low maintenance and wildlife friendly) planting can be successfully integrated around smart new developments by adding a neat...
2.19 Maximising Environmental Benefits through Sustainable Hard Landscape Specification

The design and installation of new hard landscapes across Doncaster, presents a real opportunity to achieve significant environmental benefits. At their very basic these benefits should take the form of:

- Reduced transport costs of materials through using local suppliers and sources wherever feasible
- Specification of recycled materials wherever possible – reducing energy wastage
- Specification of ‘environmentally friendly’ materials that have low embodied energy ie are produced through simple, energy efficient manufacturing processes
- Making relatively small changes in material and construction technique specifications could result in significant environmental benefits due to the scale of development that is likely to take place across the site.

**Permeable hard surfacing** should be specified across development sites. Permeable surfacing allows rainfall runoff to dissipate in a relatively natural way as opposed to running directly into sub-surface drains. Permeable surfacing used to surface business car parks and forecourts, footpaths, housing patios and driveways can provide an attractive, non-slip surface throughout the year that reduces the pressure on traditional drainage systems. For example:

- Porous recycled rubber surfacing has been used to surface up to the base of street trees. This allows rainwater to reach the roots.
- An example of permeable, recycled plastic grass reinforcement mesh suitable for surfacing of car parks. (Netlon netpave50)

**Retaining walls** can be designed so that they allow some permeability to rainwater and hard edges and straight lines can be ‘softened’ by using materials during construction that allows herbaceous plants and grasses to colonise without compromising the long term stability of surface structure of the walls. There are a number of construction techniques available such as gabion walls using locally sourced stone infill to encourage the development of locally appropriate ecology, brick walls with coursing that omits bricks within the pattern to allow organic matter accumulation and ultimately small plant growth as well as specially designed materials such as ‘crib-lock’ timber or concrete blocks into which soil and plants can be added.

- Gabion retaining structures infilled with brick rubble and faced with local stone. Small plants have been encouraged to grow in purpose made gaps between facing stones. Species that have low soil and nutrient requirements survive well.

**Green roofs** can provide significant environmental benefits and have been proven to:

- Reduce rainfall runoff which can reduce the required capacity of traditional sub surface drainage system
- Provide habitats for many species including birds and insects
- Present attractive views across often expansive flat roofs

- An example of a green roof. (Netlon greenroof50)
Green roofs are an increasingly used method of both reducing the volume of and slowing the flow rate of rainfall runoff reaching the ground. Flat and gently sloping roof surfaces can be covered with lightweight planting mediums and sown or planted with a range of locally appropriate species. Green roofs are increasingly being specified as elements of the construction process integral to suds systems and can often be fitted retrospectively to buildings. “Planting green roofs and living walls” (Dunnett and Kingsbury 2004) is a useful publication providing planting design guidance and construction advice.

**Wetlands and Sustainable Urban Drainage Systems (SUDS)**

SUDS are an approach to managing water runoff from urban areas, in simplistic terms they collect, clean, store and release water back in to the environment as slowly as possible:

In summary the benefits of SUDS are:

- Attenuate water runoff to reduce flooding and environmental damage downstream of a development
- Manage pollution by trapping silts and treating runoff
- Provide amenity value to the local and wider community
- Provide habitat and biodiversity within the development

The management and maintenance of SUDS needs to consider all of these components of the design and not specific elements in isolation.

Although there are no current legally binding obligations relating to the provision and maintenance of SUDS an ‘Interim Code of Practice’ has been developed by the National SUDS Working Group (July 2004). A number of useful design guidance and advice documents are available and should be used to ensure appropriate landscape design of water elements within the new landscape;

- **SUDS Design Manual for England and Wales** (CIRIA C522)
- **SUDS Best Practice Manual** (CIRIA C523)
- **Waterways and Wetland handbook** (BTCV)
- **The Pond Book: A Guide to management and creation of ponds** (Ponds Conservation Trust, Oxford)

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**Maximising the Safe Use of Water in New Landscapes**

Water when well managed is a valuable wildlife habitat and can be a very attractive landscape feature. Thoughtfully designed water features such as ponds, wetland scrapes, damp ditches and streams can be used to give a wonderfully restorative feel to new landscapes and encourage calm contemplation as well as excitement through learning about habitats and spotting interesting wildlife.
Water can be used in the landscape in a myriad of ways from permanent large ponds that require detailed construction techniques to small ephemeral ponds and wetland scrapes that change water levels with the seasons – often drying out during summer months and swelling throughout the winter. Water features in the Doncaster landscape should be designed in such a way that their form and function compliment the existing landscape and wildlife habitats. A wealth of design information for water features exists including BTCV Practical handbook for the creation of Waterways and Wetlands.

Planting mixes for wetland habitats and suds creation should be developed carefully giving priority to the ecological benefits of species and the habitats they form rather than the just visual benefits. ‘Traditional’ wetland landscape planting palettes that are frequently used inappropriately in ‘natural’ wetland planting schemes can often be less productive and sustainable in the long-term than using slower growing native, appropriate species. Careful thought must be given to species selection based on the survey work carried out prior to development and expert ecological advice should be sought in the early stages of planting design to ensure the integrity of designs.

### Water in the landscape - Health and Safety considerations

It is important that the safety aspects of creating water-bodies are considered at the earliest possible stages of the landscape design process to avoid making common mistakes that result in unattractive, uncomfortable and often unsafe water features. Careful design consideration must be given to:

- **Pond edge gradients** – these should be as shallow as possible to provide a range of habitats for natural colonisation of plants and wildlife as well as making access to the waters edge easy and safe.

- **Access to pond edges** can be formalised by creating ‘beaches’ using sand/pebbles and by building boardwalks and viewing platforms.

- **There are many local examples of well-created ponds and other wetland areas.** Detailed design advice can be provided by environmental organisations to avoid common mistakes;

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This pond has a range of features with a mixture of steeply and gently sloping sides. With naturalistic planting it forms an attractive and dramatic gateway to the surrounding development.

Design of ponds with steep sides and deep water and no shallow edges can be hazardous and should be avoided. The steeply sloping and non-vegetated sides of this pond make it seem bare and unattractive although shrub planting along the top of the banks softens its impact. If redesigned to look more naturalistic, this pond could become an attractive focal point.

These ponds have been designed with forms and vegetation that mimics natural ponds. They are attractive to people and are a wildlife friendly feature in amongst the surrounding developments.
3.0 Use of Scale and Colour in New Developments in Doncaster

Background

Modern building techniques have allowed man to create new landscape and townscape at a rate and a scale unequalled in the past. It has provided builders with a huge choice of building materials, many of them artificial and thus given them the responsibility for choosing the colours that increasingly come to dominate the landscape. Strategic employment sites have been evolving with a range of building heights and sizes, resulting in major visual change within the local landscapes.

The scale and colour of new buildings are key elements which can result in major change within the local landscape. The following text provides broad advice on colour and scale for new employment and residential developments across Doncaster. It draws on examples of good and bad practice to illustrate the techniques for reducing the impact of development within the landscape. It also refers to the emerging Doncaster Urban Characterisation Study for advice on the existing building materials, colours and textures in the surrounding area which contribute to the ‘sense of place’ of areas considered by the Study.

The following documents contain useful information and guidance:

- Landscape Character Assessment – Guidance for England and Scotland, 2002
- Doncaster Urban Characterisation, Study 2006, DMBC
- Britain in View Colour and the Landscape, Michael Lancaster, 1984
- Colour Outside, Tom Porter 1982
- Architecture as a Home for Man, Lewis Mumford 1975
- Introducing Urban Design – Interventions and Responses, Clara Greed & Marion Roberts, 1998

Interpreting colour in the landscape

In sunlight a building may appear as a bright target against the background of the landscape. If white, it is seen in strong reflective contrast to the darker green background of vegetation. If red, the reflective value is nearer to that of the green, and we are more conscious of a contrast of hue between the complementary red and green. If the colour of the building is similar but not too close to that of its background – as in the case of a red building set against brown ploughed land – we see a relationship of similar hues.

Colour is defined as ‘light of different wavelengths reflected at different degrees of intensity from the surfaces of the earth and sky’. It varies according to the nature of the light source, the distance from which it is seen, and the texture of the surface from which it is reflected.

Until the nineteenth century, when mass production and transport improvements distributed materials to all parts of the UK, colour in buildings was usually incidental. Natural materials were chosen because they were locally available and appropriate to the area. To a greater or lesser degree, they had an affinity with the landscape from which they were derived.

Industrialisation, mass-production and democracy have since shifted the balance away from natural materials towards the synthetic. New materials are valued for their lightness, flexibility and precision. As Lewis Mumford wrote, ‘we need to enrich the future by maintaining in the midst of change visible structural links with the past in all its richness and cultural variety’. This we can achieve by careful consideration for all aspects of new development: siting, scale, form, detail, texture and colour.

Colour description

Colour is determined by three factors: hue or colour (whether it is red, yellow or blue), values (lightness, brightness or reflectivity), and chroma (intensity of saturation). In the UK the British Standard BS5252(1976) has been developed to provide a common approach to specifying colour.

Colour harmony

Most theories on colour harmony (such as Chevreul) observe that colours look best together either when they are closely related, complementary or in strong contrast. Colour wheels have helped develop our understanding of colour harmony. The colour wheel identifies three primary colours, red, blue and yellow, which can not be created by mixing other colours. Secondary colours are green orange and violet, which can be created by combining two primary colours. The six tertiary colours are created by mixing a primary colour with an adjacent secondary colours. Black, white and grey are not true colours, and considered to be neutral or achromatic colours.
Geography of colour

Stone has a special relationship with the landscape. Because transport costs were always prohibitive, except for important buildings of religious and social significance, indigenous stone buildings act as indicators of their geological parentage, occasionally revealed in matching outcrops. This is particularly evident in the UK, where one can scarcely travel thirty miles without crossing a geological boundary. Thus it is possible to define many areas of specific and coherent character by their buildings and landscape background.

Brick also has local affinities, and the brick colours of vernacular buildings are often associated with specific localities. Although most bricks are now machine-made, there is a wide variety of colours to choose from, including many still available in hand-made bricks.

Colour in the Doncaster Landscape

Historically, Britain was a land of forest, and timber was for a long time the commonest building material. Even now we depend upon it for our roofs, floors, doors and windows. However, the historic use of timber for buildings, ship-building and industrialisation have resulted in the prevalence of stone and brick.

Historically, South Yorkshire to the Midlands are stone country. The older geological formations yield many qualities and colours of stone. Colours range from the grey whites of Magnesian Limestone, through the softer creams and yellows of sandstones, to tough dark brown of gritstones. The use of brick sets the tone for the study of colour in buildings in the Doncaster area. The variation in iron and lime content results in a variety of brick colours.

Similarly, roof is one of the more noticeable parts of the building seen at a distance in the landscape. For centuries thatch and stone tiles in stone districts were the commonest materials in use. In many areas roofing material was replaced by Welsh slate. Not only is it strong and durable, it has the advantage of being easy to split into thin layers, which makes the roofs approximately one fifth of the weight of the equivalent in stone. In towns and villages surrounding Doncaster slate or tile roofs are frequently found. More area specific details are available in the Urban Characterisation Study.

3.1 Colour Guidance for Doncaster

New development across Doncaster will require careful co-ordination of siting, scale, form, colour and detail of the buildings and their surroundings. The integration of the development may necessitate creation of platforms and screening with fencing, earth bunding and trees and shrubs.

Selecting appropriate colours for new developments

On the choice of colours, the basic principles apply. Dark colours will usually help a building to blend with the landscape and light colours will help it blend with the sky. Dark colours, especially at the cooler end of the spectrum, appear smaller than light ones. Large areas of bright colours should in general be avoided, because they are likely to dominate their surroundings, and may well create discordant effects in relation to other buildings. Also the eye soon tires, and the colour itself may well lose its appeal as well as its freshness during the life of the building. Colour may be used in different ways to express the character and the spirit of the building. Colours can be used to make it appear brighter or duller, larger or smaller, lighter or heavier, warmer or cooler.

New buildings: Colour selection for new buildings must be selected from those currently existing across the area. The colours range from shades of grey-whites to greens, yellows, reds and browns.

Roofs: For new developments where the dominant visual element will be the roof areas it will be important to ensure appropriate colour is used, in a matt, non-reflective finish to ensure that large expanses of roof area do not stand out in the views.

Elevations: For new developments where the dominant visual element will be the elevations of the new units the use of appropriate materials such as brick and stone which complements the adjacent residential areas will be important in these views, together with screen planting.
3.2 Development Platforms Guidance for Doncaster - Scale

Platforms should be designed to sit at a similar level to surrounding levels and avoid too much vertical contrast, particularly along the boundaries with the fields and existing development. Development platform levels ultimately limit the overall height of the new buildings in sensitive landscapes, and it will be important to ensure that new platforms are carefully located at points within sites that, where appropriate, minimise new buildings becoming dominant vertical elements. There may well be areas of new development in landscapes of relatively low intactness and quality. Careful, creative design of these developments will ensure that the development itself contributes significantly to creating a new, high quality landscape character for the area.

Building size: Residential areas should reflect the existing areas of residential development, using brick with slate or tile roofs. There is a limit to the size and scale of commercial buildings which can normally be concealed. This is partly determined by prevailing topography and existing vegetation cover, but also by the size and massing of the buildings. New planting takes a number of years to provide an adequate screen for a development. Buildings should generally be of no more than two storey construction.

Screen/Buffer Planting: Woodland planting is typically planted as whips or feathered specimens, and, depending on species selection, will take between 5 and 7 years to provide a good degree of screening to about 5 metres. With good management woodland will provide a good degree of screening for buildings up to 10-12 metres in height by around 15 years. However, for the large scale modern units between 18 and 26 metres in height woodland planting will be unable to mitigate views of the new development. It is therefore recommended that strategic employment buildings should be limited to a maximum of 15 metres in height.

Retaining existing views: It is also recommended that consideration is given to a range of building heights to ensure that buildings do not prevent key views. No building should take place which would adversely impact the setting of this area. The careful siting of new buildings behind existing tree cover and avoidance of breaking the sky-line is an important factor in minimising the visual impact of new developments in the landscape. Depending on the location of the views, it may not be possible to screen new buildings, for example, in views from locations along a ridgeline, with views down across the Borough. Views may be principally of roofs and large building roofscape should be carefully considered and perhaps reduced in scale or altered in shape through careful use of colour.

There is a relationship between character and activity which has its own special attraction. As industry becomes more complex, more automated and more segregated its traditions change. We are hiding its functions in superstructures, large flexible sheds, which rarely exhibit their contents. These are developing a new aesthetic in their bold use of colour from such sources as industrial colour-coding.

3.3 General Lighting Guidance for New Developments

Lighting of new developments in itself is not a problem; it only becomes a problem where it is excessive, poorly designed or badly installed. New developments may take place in a currently unlit area of landscape, and may therefore create a large new night-time source of light. Measures should be identified to ensure that the lighting proposals provide just sufficient lighting for the different development areas, and to ensure that the development does not result in additional light pollution.

A lighting strategy and design philosophy for new development lighting proposals should be based on good design; siting and best practices available that will reduce glare and light trespass.

Careful siting of the buildings and planting elements of the development combined with the landscape proposals should create an effective landscape buffer around the site in the night-time landscape.

The following documents provide useful information and guidance for the design of effective lighting strategies that aim to integrate new developments into the existing landscape:

- PPG23 Planning & Pollution Control
- Institution of Lighting Engineers (ILE), Guidance Notes for the Reduction of Light Pollution, 2000 (Revised 05/03)
- CPRE Guidance on Light Pollution
Minimising Light Pollution from New Developments: Outdoor lighting has increased dramatically over the last thirty years. The night sky over England is more brightly lit than any other European country with the exception of the Netherlands.

Light pollution is the popular name for sky glow, which is a brightening of the night sky caused by artificial light sources being scattered by small particles in the air such as water droplets and dust. Light pollution also includes light intruding into our homes such as bright street light. Light trespass is the spill of light beyond the boundary of the property on which it is located, and is measured on the vertical plane at the boundaries of properties in lux. Glare is the uncomfortable brightness of a light source when viewed directly against a darker background.

The main sources of light pollution are street lighting, security lamps, advertising and display lighting, floodlighting for sports events and building illumination. Poorly designed and installed luminaries may allow light to shine upwards, which causes sky glow. All surfaces have a degree of reflectivity and therefore some artificial light is also reflected upwards from roads, pavements and buildings.

Light pollution can also impact on wildlife in a number of ways:

- Cause migrating birds to collide with lighted buildings
- Cause a false dawn and disrupt bird's behaviour
- Cause moth deaths as they are attracted to the light
- Disrupt tree and plant growth that are controlled by length of day

Artificial light can be a nuisance and a number of organisations campaign against light pollution, including the Campaign for Dark Skies, government departments, local town and county councils. Lighting designers, manufacturers, engineers and architects are beginning to appreciate the need to reduce light pollution.

3.4 Doncaster’s Environmental Situation

According to CPRE Guidance on Light Pollution and the Campaign for Dark Skies guidance, Doncaster is considered to be particularly sensitive to lighting with the predominance of Green Belt area, ASLVs and diversity of designated ecological sites. Particular consideration is therefore likely to be necessary for the control of light for many new development locations.

The location potential future development sites in semi-rural Landscape Character Areas suggests that many development sites could be classified as Environmental Zones E2 and E3 as defined in the Institution of Lighting Engineers publication “Guidance Notes for the Reduction of Light Pollution” which are defined as:

- **E1: Intrinsically dark areas National Parks**: Areas of Outstanding Natural Beauty,
- **E2: Low district brightness areas**: Rural or small village locations
- **E3: Medium district brightness areas**: Small town centres or urban locations
E4: High district brightness areas: Town/city centres with high levels of night-time activity

Where an area to be lit lies on the boundary of two zones or can be observed from another zone, the obtrusive light limitation values used should be those applicable to the most rigorous zone.

3.5 Development of a Lighting Strategy

It is recommended that new development proposals should include a well developed lighting strategy for each development, the principle aim of which should be to install and maintain an environmentally sustainable lighting scheme which will minimise visual effects by day and by night whilst maintaining operational and safety standards. The design such schemes should be based on the need to minimise energy use and light pollution. Levels of illumination should provide adequate lighting for the task. This is as recommended by the relevant standard (e.g. Road Lighting BS5489/EN13201) and over lighting will be avoided. Proposed lighting levels should be a requirement of mitigation proposals presented as part of a Landscape and Visual Impact Assessment for new development sites.

Consideration would also be given to the provision of dimming facilities for road lighting to enable lower levels of illumination during “off peak” times. In addition “switching” of equipment will be such that lighting is only provided when required, e.g. when and where required lighting is provided for car parking this will only be for the hours of use.

The choice of light sources should be based on existing installations in the surrounding area and ensure the following criteria are met:

- Colour rendering of minimum CRI-60
- Good colour appearance
- Efficient use of energy

Typically the use of the following lamps will be considered.

- Ceramic Metal Halide (CDM)
- High Pressure Sodium (SON)
- Compact Fluorescent

Luminaires should be chosen to ensure the following:-

**Control of light output** – should be through the use of reflectors, refractors and baffles to maximise lamp output and minimise spill light.

**Long term durability** – they should be constructed of materials suitable for use in an external environment and wherever possible being recyclable. Adequate protection from the ingress of moisture and dust should be ensured.

**Maintainability** - All chosen luminaires should be chosen such that routine maintenance is minimal and easy access to lamp and control gear components is provided. Equipment should be chosen from suppliers with recognised track record for provision of spares over an acceptable time period after installation.

**Columns and posts** used for lighting and signs purposes should be of such height above ground level to be adequate but not excessive so as to ensure compatibility with the surrounding architectural and other features. These may typically be as below:-

- Main Feeder Road Lighting – 10 metres
- Spine Road Lighting – 8 metres
- Residential Road Lighting – 6 metres
- Commercial Areas (where columns are required) – 10 metres maximum

**Lighting columns** should be of tubular galvanised steel with bracket projections kept to the shortest possible, spigot mounted luminaires being employed whenever possible. Where proposals suggest it is necessary to illuminate large areas consideration would be given to higher mounting heights to again ensure minimum obstruction and efficient/effective lighting. The use of higher mounting height should be balanced with the choice of luminaires to ensure minimisation of spill light.

**Switching:** Wherever lighting is deemed to be required throughout the hours of darkness (dusk to dawn) each luminaire will be provided with a photo electric control unit (PECU). Where lighting is to be provided for less than dusk to dawn, fully solid state programmable timers should be installed.

**Siting of equipment:** Where road lighting is to be provided columns/posts should be sited to the back of footways.